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 NEWS  2         "Ask CAS" for self-help around the clock
 NEWS  3  DEC 21 IPC search and display fields enhanced in CA/CAplus with the
                 IPC reform
 NEWS  4  DEC 23 New IPC8 SEARCH, DISPLAY, and SELECT fields in USPATFULL/
                 USPAT2
 NEWS  5  JAN 13 IPC 8 searching in IFIPAT, IFIUDB, and IFICDB
 NEWS  6  JAN 13 New IPC 8 SEARCH, DISPLAY, and SELECT enhancements added to
                 INPADOC
 NEWS  7  JAN 17 Pre-1988 INPI data added to MARPAT
 NEWS  8  JAN 17 IPC 8 in the WPI family of databases including WPIFV
 NEWS  9  JAN 30 Saved answer limit increased
 NEWS 10  JAN 31 Monthly current-awareness alert (SDI) frequency
                 added to TULSA
 NEWS 11  FEB 21 STN AnaVist, Version 1.1, lets you share your STN AnaVist
                 visualization results
 NEWS 12  FEB 22 Status of current WO (PCT) information on STN
 NEWS 13  FEB 22 The IPC thesaurus added to additional patent databases on STN
 NEWS 14  FEB 22 Updates in EPFULL; IPC 8 enhancements added
 NEWS 15  FEB 27 New STN AnaVist pricing effective March 1, 2006
 NEWS 16  FEB 28 MEDLINE/LMEDLINE reload improves functionality
 NEWS 17  FEB 28 TOXCENTER reloaded with enhancements
 NEWS 18  FEB 28 REGISTRY/ZREGISTRY enhanced with more experimental spectral
                 property data
 NEWS 19  MAR 01 INSPEC reloaded and enhanced
 NEWS 20  MAR 03 Updates in PATDPA; addition of IPC 8 data without attributes
 NEWS 21  MAR 08 X.25 communication option no longer available after June 2006
 NEWS 22  MAR 22 EMBASE is now updated on a daily basis
 NEWS 23  APR 03 New IPC 8 fields and IPC thesaurus added to PATDPAFULL
 NEWS 24  APR 03 Bibliographic data updates resume; new IPC 8 fields and IPC
                 thesaurus added in PCTFULL
 NEWS 25  APR 04 STN AnaVist $500 visualization usage credit offered

 NEWS EXPRESS  FEBRUARY 15 CURRENT VERSION FOR WINDOWS IS V8.01a,
               CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 19 DECEMBER 2005.
               V8.0 AND V8.01 USERS CAN OBTAIN THE UPGRADE TO V8.01a AT
               http://download.cas.org/express/v8.0-Discover/

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FILE 'HOME' ENTERED AT 09:34:22 ON 10 APR 2006

=> FILE REG
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       0.21       0.21

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STRUCTURE FILE UPDATES:     7 APR 2006  HIGHEST RN 879722-24-4
DICTIONARY FILE UPDATES:    7 APR 2006  HIGHEST RN 879722-24-4

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* effective March 20, 2005.  A new display format, IDERL, is now   *
* available and contains the CA role and document type information. *
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=> S TEDA/CN
L1            1 TEDA/CN

=> D

L1   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2006 ACS on STN
RN   280-57-9  REGISTRY
ED   Entered STN:  16 Nov 1984
CN   1,4-Diazabicyclo[2.2.2]octane (8CI, 9CI)  (CA INDEX NAME)
OTHER NAMES:
CN   1,4-Ethylenepiperazine
CN   A 33
CN   Bicyclo[2.2.2]-1,4-diazaoctane
CN   D 33LV
CN   Dabco
CN   Dabco 33LV
CN   Dabco 3LV
```

10/829,176 — STN SEARCH TRANSCRIPT

CN Dabco Crystalline
CN Dabco L 1202
CN Dabco S 25
CN Jeffcat TD 100
CN L 33
CN L 33E
CN LC 96003
CN Minico L 1020
CN N,N'-endo-Ethylenepiperazine
CN Niax A 33
CN NSC 56362
CN PC CAT TD 33
CN Polycat 33LV
CN TD 100
CN TED
CN **TEDA**
CN Teda L 33
CN Tegamine 33
CN Tego Amine
CN Texacat TD 100
CN Texacat TD 33
CN Thancat TD 33
CN Thancat TD 33A
CN Toral SM 2
CN Toyocat L 33
CN Toyocat TEDA L 33
CN Triethylenediamine
FS 3D CONCORD
DR 23790-33-2, 101484-19-9, 150605-01-9, 88935-43-7, 203072-11-1, 309955-09-7
MF C6 H12 N2
CI COM, RPS
LC STN Files: ANABSTR, AQUIRE, BEILSTEIN*, BIOSIS, BIOTECHNO, CA, CAOLD, CAPLUS, CASREACT, CBNB, CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DETHERM*, DIPPR*, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2, GMELIN*, HSDB*, IFICDB, IFIPAT, IFIUDB, MEDLINE, MRCK*, MSDS-OHS, NIOSHTIC, PIRA, PROMT, RTECS*, SPECINFO, SYNTHLINE, TOXCENTER, ULIDAT, USPAT2, USPATFULL, VTB
(*File contains numerically searchable property data)
Other Sources: DSL**, EINECS**, TSCA**
(**Enter CHEMLIST File for up-to-date regulatory information)

PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

5372 REFERENCES IN FILE CA (1907 TO DATE)
253 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
5385 REFERENCES IN FILE CAPLUS (1907 TO DATE)
107 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> FILE CAPLUS
COST IN U.S. DOLLARS

	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	7.10	7.31

FILE 'CAPLUS' ENTERED AT 09:34:41 ON 10 APR 2006
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FILE COVERS 1907 - 10 Apr 2006 VOL 144 ISS 16
FILE LAST UPDATED: 9 Apr 2006 (20060409/ED)

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=> S L1
L2 5385 L1

=> S L2 AND DIVIDING WALL
22169 DIVIDING
22 DIVIDINGS
22189 DIVIDING
(DIVIDING OR DIVIDINGS)
280725 WALL
127969 WALLS
363351 WALL
(WALL OR WALLS)
319 DIVIDING WALL
(DIVIDING(W)WALL)
L3 0 L2 AND DIVIDING WALL

=> S L2 AND COLUMN AND WALL
395941 COLUMN
102772 COLUMNS
446424 COLUMN
(COLUMN OR COLUMNS)
280725 WALL
127969 WALLS
363351 WALL
(WALL OR WALLS)
L4 1 L2 AND COLUMN AND WALL

=> D

L4 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2002:286003 CAPLUS
DN 136:310883
TI Manufacture of foamed polyurethane rolls without entrapping air and electrophotographic apparatus assembled with the same
IN Fukuda, Hiroya; Satoyoshi, Minoru; Takahashi, Wataru
PA Bridgestone Corp., Japan
SO Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI JP 2002113727 A2 20020416 JP 2000-307403 20001006
PRAI JP 2000-307403 20001006

=> S DIVIDING WALL OR DWC
22169 DIVIDING
22 DIVIDINGS
22189 DIVIDING
(DIVIDING OR DIVIDINGS)
280725 WALL
127969 WALLS
363351 WALL
(WALL OR WALLS)
319 DIVIDING WALL
(DIVIDING(W)WALL)
56 DWC
11 DWCS
66 DWC
(DWC OR DWCS)
L5 380 DIVIDING WALL OR DWC

=> S L5 AND PUR?
1744480 PUR?
L6 44 L5 AND PUR?

=> S L6 AND POLY?
3837414 POLY?
L7 3 L6 AND POLY?

=> D 1-3 IBIB ABS

L7 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:975871 CAPLUS
DOCUMENT NUMBER: 143:248797
TITLE: Manufacture of (meth)acrylate esters via **purification** by distillation
INVENTOR(S): Endo, Toru; Ogawa, Akira
PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005239564	A2	20050908	JP 2004-47586	20040224

PRIORITY APPLN. INFO.: JP 2004-47586 20040224
AB The (meth)acrylate esters are manufactured via **purification** by distillation using apparatus equipped with **dividing wall** columns. Thus, a reaction mixture, given by transesterification of Me methacrylate with BuOH, was mixed with a **polymerization** inhibitor and applied to a **dividing wall** column. A fraction from the middle of the column was condensed to give Bu methacrylate containing 52 ppm Me methacrylate and <0.5 ppm **polymerization** inhibitor.

L7 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:466744 CAPLUS
DOCUMENT NUMBER: 137:47104
TITLE: Preparation of heteroarylsulfonylureas and related compounds as platelet ADP receptor antagonists
INVENTOR(S): Scarborough, Robert M.; Jantzen, Hans-michael; Huang, Wolin; Sedlock, David M.; Marlowe, Charles K.; Kane-Maguire, Kim A.

PATENT ASSIGNEE(S): Portola Pharmaceuticals, Inc., USA
SOURCE: U.S. Pat. Appl. Publ., 193 pp., Cont.-in-part of U.S. Ser. No. 755,812.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2002077486	A1	20020620	US 2001-920325	20010802
US 6906063	B2	20050614		
WO 2001057037	A1	20010809	WO 2001-US3585	20010205
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 2002025961	A1	20020228	US 2001-775812	20010205
CA 2468925	AA	20030213	CA 2002-2468925	20020725
EP 1412364	A1	20040428	EP 2002-750339	20020725
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
JP 2005504035	T2	20050210	JP 2003-517063	20020725
WO 2003011872	A1	20030213	WO 2002-US23909	20020726
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
US 2003162774	A1	20030828	US 2003-350883	20030123
US 6689786	B2	20040210		
US 2004147576	A1	20040729	US 2004-759396	20040115
US 7022731	B2	20060404		
US 2005228029	A1	20051013	US 2004-941053	20040913

PRIORITY APPLN. INFO.:		
US 2000-180208P	P	20000204
US 2000-202072P	P	20000505
US 2000-230447P	P	20000906
US 2001-775812	A2	20010205
WO 2001-US3585	A2	20010205
US 2001-920325	A	20010802
WO 2002-US23909	W	20020725
US 2003-350883	A1	20030123

OTHER SOURCE(S): MARPAT 137:47104
AB DWN(E)C(:Y)NHSO2A, **DWC**(:Y)NHSO2A, DWN(E)C(:Y)NHCH2A, DWN(E)C(SZ):NSO2A, etc.; [A = (substituted) aryl, heteroaryl, alkylaryl, alkylheteroaryl; W = (substituted) aryl, heteroaryl; D = NR1COR2, OR1, specified heteroaryl; E = H, alkyl, **polyhaloalkyl**, cycloalkyl, alkylaryl, (substituted) aryl, heteroaryl; Z = alkyl; R1 = H, alkyl, **polyhaloalkyl**, cycloalkyl, alkylaryl, alkylcarbonyl, (substituted) arylcarbonyl, aryl, heteroaryl, heteroarylcarbonyl; R2 = (substituted) aryl, heteroaryl; R1R2 = bond, atoms to form a C1-8 chain], were prepared as inhibitors of ADP-mediated platelet aggregation (no data). Thus, N-(4-amino-2-methylphenyl)-4-chlorophthalimide di-Me N-cyanodithioiminocarbonate were stirred in pyridine at 115° for 8 h

to give a residue. The residue was heated with DBU, DMAP, and 5-chlorothiophene-2-sulfonamide in pyridine at 115° for 23 h to give 5-chloro-2-{4-[[[[(5-chlorothiophen-2-yl)sulfonyl]amino](cyanoimino)methyl]amino]-2-methylphenyl}benzo[c]azolidine-1,3-dione.
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:105018 CAPLUS
DOCUMENT NUMBER: 132:163120
TITLE: Extrusion foam body efficient in biological water treatment
INVENTOR(S): Arai, Takashi; Negishi, Minoru
PATENT ASSIGNEE(S): Dainichi Can Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000041669	A2	20000215	JP 1998-246466	19980729

PRIORITY APPLN. INFO.: JP 1998-246466 19980729
AB An efficient, durable and economical extrusion molding foam body is provided for the use in biol. water treatment as microorganism-immobilizing carrier. The foam body is formed in a cylinder shape by the extrusion molding of plastics (e.g., **polyolefin** resin) so that it is possessed with a large surface area and a structural breaking strength comparable to the case of the small cylindrical outer diameter in addition to advantages of the large cylindrical outer diameter The cylindrical extrusion foam body is equipped with the multiple **dividing walls** extending in a radial fashion toward the outer wall from the point around the cross-section center. Each part of the extrusion foam body, i.e., outer wall and **dividing walls**, is rough on its surface. Continuous foam or penetrating foam is formed inside the walls.

=> S L6 NOT L7
L8 41 L6 NOT L7

=> D 1-41 IBIB ABS

L8 ANSWER 1 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:168163 CAPLUS
DOCUMENT NUMBER: 144:234987
TITLE: Method for separation of **pure** trioxane by distillation
INVENTOR(S): Siegert, Markus; Lang, Neven; Stroefer, Eckhard; Stammer, Achim; Friese, Thorsten
PATENT ASSIGNEE(S): Basf Aktiengesellschaft, Germany
SOURCE: PCT Int. Appl., 27 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006018302	A1	20060223	WO 2005-EP8944	20050818

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

DE 102004040284 A1 20060223 DE 2004-102004040284 20040819
PRIORITY APPLN. INFO.: DE 2004-102004040284A 20040819
AB The invention relates to a method for separation by distillation of **pure** trioxane from a supply flow containing at least 50% of trioxane, formaldehyde, water, and other components. The supply flow and another flow which contains water but does not contain any constituents foreign to the supply flow are supplied to a **dividing wall** column comprising an essentially perpendicular **dividing wall** which divides the inside of the column into a supply region, a delivery region, an upper common column region, and a lower common column region. A bottom flow containing **pure** trioxane and a lateral flow containing **pure** water are removed from the delivery region of the first **dividing wall** column.
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 2 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:1105685 CAPLUS
TITLE: Industrial waste incinerator preventing contamination of waste heat boiler
INVENTOR(S): Lee, Gi Pung; Park, Seok Ho
PATENT ASSIGNEE(S): Doosan Heavy Industries + Construction Co., Ltd., S. Korea
SOURCE: Repub. Korean Kongkae Taeho Kongbo, No pp. given
CODEN: KRXXA7
DOCUMENT TYPE: Patent
LANGUAGE: Korean
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 2001037287	A	20010507	KR 1999-44708	19991015

PRIORITY APPLN. INFO.: KR 1999-44708 19991015
AB **PURPOSE**: An industrial waste incinerator prevents residue formed after the primary combustion from flowing into a waste heat boiler to prevent performance and efficiency of the waste heat boiler from falling. CONSTITUTION: A **dividing wall**(120) is installed on the inlet side of a secondary combustion incinerator(14) to prevent fly ash which is burned residue generated in a rotary kiln(12) from flowing into the side of the secondary combustion incinerator(14). The **dividing wall**(120) preferably block two thirds of the inlet of the secondary combustion incinerator(14) so that incineration gas flows into the secondary combustion incinerator smoothly and fly ash is blocked.

L8 ANSWER 3 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:348010 CAPLUS
DOCUMENT NUMBER: 140:357850
TITLE: Process for the **purification** of toluenediisocyanate using a **dividing-wall** distillation column for the final **purification**
INVENTOR(S): Gruen, Marcus Paul; Brady, Bill, Jr.; Keggenhoff, Berthold; Verkerk, Kai; Schal, Hans-Peter

PATENT ASSIGNEE(S): Bayer Materialscience AG, Germany
SOURCE: Eur. Pat. Appl., 10 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1413571	A1	20040428	EP 2002-23662	20021022
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
CA 2445209	AA	20040422	CA 2003-2445209	20031016
US 2004118672	A1	20040624	US 2003-687157	20031016
BR 2003004624	A	20040831	BR 2003-4624	20031020
CN 1496978	A	20040519	CN 2003-10102874	20031022
JP 2004143173	A2	20040520	JP 2003-362193	20031022

PRIORITY APPLN. INFO.: EP 2002-23662 A 20021022

AB A process for the **purification** of toluenediisocyanate from a crude distillation feed comprising <2% phosgene is presented comprising: (a) fractionating the crude distillation feed comprising <2% phosgene to remove the solvent and optionally the reaction residues to produce a crude toluylenediisocyanate feed containing <20% solvent; and (b) separating the crude toluylenediisocyanate feed containing <20% solvent in a **dividing-wall** distillation column into four product fractions P1-P4, where P1 is a vapor-phase low-boiler and solvent-enriched gas stream, P2 is a low-boiler and solvent-enriched product, P3 is a high-boiler-enriched bottoms product comprising toluenediisocyanate, and P4 is a toluenediisocyanate product stream lean in low-boilers, high-boilers, and reaction residues. A process flow diagram is presented.

REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:219035 CAPLUS
DOCUMENT NUMBER: 140:257782
TITLE: Exhaust gas **purification** filter with improved occlusion ability of NOx catalyst
INVENTOR(S): Nakano, Yasuaki; Hirota, Shinya
PATENT ASSIGNEE(S): Toyota Motor Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004084502	A2	20040318	JP 2002-244012	20020823

PRIORITY APPLN. INFO.: JP 2002-244012 20020823

AB The filter includes a plurality of gas passages with one of the ends sealed, **dividing walls** with waste gas-passable micropores formed on the surface and inside, NOx occlusion catalyst loaded in the micropores, and SOx trapping catalyst loaded on the side surface of the walls dividing the passages with only downstream ends sealed and the opposite surface of the walls dividing the passages with only upper stream ends sealed.

L8 ANSWER 5 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:80668 CAPLUS
DOCUMENT NUMBER: 140:146648
TITLE: Continuous **purification** by distillation of methanol solvent in the manufacture of propylene oxide with the simultaneous isolation of methoxypropanols
INVENTOR(S): Bassler, Peter; Goebbel, Hans-Georg; Teles, Joaquim Henrique; Rudolf, Peter
PATENT ASSIGNEE(S): Basf Aktiengesellschaft, Germany
SOURCE: PCT Int. Appl., 34 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004009567	A1	20040129	WO 2003-EP7987	20030722
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
DE 10233386	A1	20040212	DE 2002-10233386	20020723
CA 2490151	AA	20040129	CA 2003-2490151	20030722
AU 2003251442	A1	20040209	AU 2003-251442	20030722
EP 1527056	A1	20050504	EP 2003-765086	20030722
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
CN 1671677	A	20050921	CN 2003-817693	20030722
US 2005252762	A1	20051117	US 2004-516939	20041215

PRIORITY APPLN. INFO.: DE 2002-10233386 A 20020723
WO 2003-EP7987 W 20030722

AB In the manufacture of propylene oxide free of coupling products the solvent mixture that accumulates during the synthesis is separated in a **dividing wall** column having 2 lateral outlets. MeOH is recovered through 1 lateral outlet and methoxypropanols are separated as medium-boiling fraction comprising azeotropic mixture with H2O through the 2nd lateral outlet. The low boilers are separated via the column head and the high boilers are collected in the column sump.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 6 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:80667 CAPLUS
DOCUMENT NUMBER: 140:146647
TITLE: Continuous **purification** by distillation of the solvent methanol used in the manufacture of propylene oxide
INVENTOR(S): Bassler, Peter; Goebbel, Hans-Georg; Teles, Joaquim Henrique; Rudolf, Peter
PATENT ASSIGNEE(S): Basf Aktiengesellschaft, Germany
SOURCE: PCT Int. Appl., 35 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004009566	A1	20040129	WO 2003-EP7986	20030722
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,				

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

DE 10233388	A1	20040212	DE 2002-10233388		20020723
CA 2493271	AA	20040129	CA 2003-2493271		20030722
AU 2003251441	A1	20040209	AU 2003-251441		20030722
EP 1527055	A1	20050504	EP 2003-765085		20030722
EP 1527055	B1	20060308			
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK					
CN 1678599	A	20051005	CN 2003-820005		20030722
US 2005258026	A1	20051124	US 2005-521784		20050121
PRIORITY APPLN. INFO.:			DE 2002-10233388	A	20020723
			WO 2003-EP7986	W	20030722

AB MeOH used as solvent in the manufacture of propylene oxide by oxidation of propylene with H2O2 is **purified** by distillation with simultaneous separation and isolation of methoxypropanol isomers. The solvent mixture that accumulates during the manufacture is separated in a **dividing wall** column into a low-boiler fraction containing MeOH, a medium-boiler fraction containing the methoxypropanols as an azeotropic mixture with H2O and a high-boiler fraction containing H2O and propylene glycol.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 7 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:10664 CAPLUS
DOCUMENT NUMBER: 140:43914
TITLE: Distillation column internals/configurations for process intensification
AUTHOR(S): Olujic, Z.; Kaibel, B.; Jansen, H.; Rietfort, T.; Zich, E.; Frey, G.
CORPORATE SOURCE: Laboratory for Process Equipment, TU Delft, Delft, NL-2628, Neth.
SOURCE: Chemical and Biochemical Engineering Quarterly (2003), 17(4), 301-309
CODEN: CBEQEZ; ISSN: 0352-9568
PUBLISHER: Croatian Society of Chemical Engineers
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English

AB A review. The **purpose** of this paper is to introduce some recently commercialised packed column internals and configurations developed at J. Montz company in close cooperation with universities and industry, which by the virtue of their nature intensify in some way the distillation process. These include state of the art high capacity structured packings, hybrid packed beds with partially flooded sections, streamlined liquid collectors, catalytic packings and the **dividing wall** column (**DWC**). The later one, an exclusive development realized in a close cooperation with BASF company, represents a major technol. breakthrough; recent advances being mainly reflected in increasing both mech. and process design flexibility by introducing a number of proprietary designs of **DWC** components. This paper discusses the backgrounds of developed technologies, the related state of the art and the perspectives for further development.

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 8 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:985771 CAPLUS
DOCUMENT NUMBER: 140:28151
TITLE: Process for the **purification** of mixtures of toluene diisocyanate incorporating a **dividing -wall** distillation column
INVENTOR(S): Brady, Bill; Steffens, Friedhelm; Keggenhoff, Berthold; Verkerk, Kai; Ruffert, Gerhard
PATENT ASSIGNEE(S): Bayer A.-G., Germany
SOURCE: Eur. Pat. Appl., 15 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
EP 1371633	A1	20031217	EP 2002-13460		20020614
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR					
EP 1371635	A1	20031217	EP 2003-12498		20030602
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK					
CA 2431439	AA	20031214	CA 2003-2431439		20030609
US 2003230476	A1	20031218	US 2003-457307		20030609
CN 1467202	A	20040114	CN 2003-141072		20030613
JP 2004155760	A2	20040603	JP 2003-168858		20030613
BR 2003002097	A	20040908	BR 2003-2097		20030613
PRIORITY APPLN. INFO.:			EP 2002-13460	A	20020614

AB A process for the **purification** of toluene diisocyanate (TDI), from a crude distillation feed comprising >2% phosgene, by separating the crude distillation feed in a **dividing-wall** distillation column into four product fractions (i.e., P1-P4): P1 is a phosgene-enriched, low-boiler product; P2 is a solvent-enriched product; P3 is a high boiler-enriched bottoms fraction; and P4 is a TDI product stream. Apparatus and process flow diagrams are presented.

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 9 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:726695 CAPLUS
TITLE: Fuel injector
INVENTOR(S): Kelsall, Gregory John; Senior, Peter
PATENT ASSIGNEE(S): Alstom (Switzerland) Ltd., Switz.
SOURCE: Eur. Pat. Appl.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
EP 1243854	A1	20020925	EP 2002-251528		20020305
EP 1243854	B1	20050720			
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR					
PRIORITY APPLN. INFO.:			GB 2001-5778	A	20010309

AB A fuel injector (1) for a combustor of a gas turbine engine operable on first (G) and second (L) fluid fuels, in which fuel orifices (4a, 4b) for injecting the first fuel into the combustor are exposed to combustion products during operation of the engine on the second fuel. A downstream portion of a fuel manifold (3) is divided into a radially outer annular fuel supply passage (8) for supplying a radially outer set (4a) of the fuel orifices and a radially inner annular fuel supply passage (9) for supplying a radially inner set (4b) of the fuel orifices. There is also

an annular air passage (11) for admission of compressed air into the combustor, this passage being defined between an external wall (13) of the fuel manifold and an outer shroud member (10) surrounding the fuel injector. Disposed upstream of the **dividing wall** (7) is a first set of air **purge** holes (14) provided in the external manifold wall (13) to permit fluid connection between the air passage (11) and the annular fuel manifold (3). A second set of air **purge** holes (15) is provided in the external manifold wall (13) downstream of the first set of **purge** holes (14) to permit direct fluid connection between the air passage (11) and the radially outer annular fuel supply passage (8). In this way, pressure in both the radially inner (9) and radially outer (8) annular fuel supply passages is maintained greater than that in the combustion zone (2) during operation of the engine on the second fuel, so preventing ingress of hot combustion products through both the radially inner and outer sets of fuel orifices.

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 10 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:688448 CAPLUS
DOCUMENT NUMBER: 137:206132
TITLE: Fish pond filter system
INVENTOR(S): James, Ron
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 16 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6447675	B1	20020910	US 2000-652228	20000829
US 2003006178	A1	20030109	US 2002-242059	20020910
US 6709574	B2	20040323		
US 6685826	B1	20040203	US 2003-338935	20030107
PRIORITY APPLN. INFO.:			US 2000-652228	A3 20000829
			US 2002-242059	A1 20020910

AB A system for filtering and treating waste generated or collected in the water of a fish pond is described. The system includes a pump, pre-filter, piping, a valve assembly, and a filter media container enclosing a plurality of discrete filter media. The filter media are generally hollow, plastic structures with a plurality of external ribs and internal **dividing walls**. The filter media has a high surface area-to-volume ratio and can support a high volumetric d. of naturally occurring heterotrophic bacteria. The heterotrophic bacteria establish colonies on the internal and external surfaces of the filter media and biol. metabolize waste that is trapped on the media. The bacterial metabolization transforms much of the waste to an aesthetically and biol. neutral form thereby reducing the need for chemical treatment of the pond water. The system includes a backwashing mode to agitate and remove unreacted waste from the system and direct the waste stream out of the system, preferably to be used as fertilizer.

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 11 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:566696 CAPLUS
DOCUMENT NUMBER: 135:139369
TITLE: **Purification** of ammonia by distillation
INVENTOR(S): Wostbrock, Karl-Heinz; Kaibel, Gerd; Tragut, Christian; Anken, Gabriele
PATENT ASSIGNEE(S): Basf Aktiengesellschaft, Germany
SOURCE: U.S. Pat. Appl. Publ., 9 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2001010286	A1	20010802	US 2001-767820	20010124
US 7001490	B2	20060221		
DE 10004311	A1	20010802	DE 2000-10004311	20000201
JP 2001348222	A2	20011218	JP 2001-19340	20010129
EP 1122213	A1	20010808	EP 2001-102139	20010201
EP 1122213	B1	20040102		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
AT 257125	E	20040115	AT 2001-102139	20010201
ES 2214352	T3	20040916	ES 2001-1102139	20010201
PRIORITY APPLN. INFO.:			DE 2000-10004311	A 20000201

AB Crude ammonia (**purity** of 95.0-99.9 weight%, preferably 99.0-99.7%) is separated into a low boiler fraction, a high boiler fraction, and an intermediate-boiling **pure** fraction (**purity** of ≥99.99 weight%, preferably ≥99.999%) by continuous fractional distillation in a distillation apparatus configured either as a **dividing-wall** column or as a system of thermally coupled distillation columns. The low boiler fraction is taken off at the top of the distillation apparatus The intermediate-boiling **pure** fraction is obtained at a side off-take which is preferably provided with droplet precipitators. In addition, the gas loading of the distillation column is restricted so that the operating pressure is 2-30 bar and the F factor is ≤2.0 Pa0.5. The **purified** NH3 is suitable for manufacture of food and semiconductors.

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 12 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:369962 CAPLUS
DOCUMENT NUMBER: 129:69475
TITLE: Study on plasma enhanced CVD coated material to promote dropwise condensation of steam
AUTHOR(S): Koch, G.; Zhang, D. C.; Leipertz, A.; Grischke, M.; Trojan, K.; Dimigen, H.
CORPORATE SOURCE: Lehrstuhl fur Technische Thermodynamik, LTT-Erlangen, Universitat Erlangen-Nurnberg, Erlangen, D-91058, Germany
SOURCE: International Journal of Heat and Mass Transfer (1998), 41(13), 1899-1906
CODEN: IJHMAK; ISSN: 0017-9310
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The promoting properties of hard coatings with an amorphous hydrogenated carbon basis to attain dropwise condensation (**DWC**) of steam on coated copper surfaces were investigated. Using differently produced coatings, equilibrium contact angles of Θeq of 65, 74 and 90° could be reached for water. Stable and well reproducible heat transfer measurements could be performed. For a subcooling temperature of the condenser surface of 5 K, the **DWC** heat transfer coefficient at the vertical wall is 11 times higher for the surface with Θeq = 90° than that measured for film-wise condensation (FWC), seven times higher for the surface with Θeq = 74° and 3.5 times higher for the surface with Θeq = 65°. In comparison to the heat transfer coefficient measured for a contact angle of 90° for the heat flux ranging from 0.4-0.9 MW m-2 only 53-45% (for Θeq = 74°) and 1-7.5% (for Θeq = 65°) of the 90°-values were determined For Θeq

= 90° the observed **DWC** keeps very well stable up to a tech. achievable maximum heat flux of 1.54 MW m-2. For Θeq = 74° and for Θeq = 65°, however, expanded condensation streams (mixed condensation) appeared on the surface at heat fluxes of 1.03 MW m-2 and 0.7 MW m-2. In these situations the performance characteristic is less developed in comparison to **pure DWC**, but still better than for **pure** FWC.

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 13 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:272700 CAPLUS
DOCUMENT NUMBER: 128:272165
TITLE: Operation and control of **dividing wall** distillation columns. Part 2: simulation and pilot plant studies using temperature control
AUTHOR(S): Mutalib, M. I. Abdul; Zeglam, A. O.; Smith, R.
CORPORATE SOURCE: Department of Process Integration, UMIST, Manchester, UK
SOURCE: Chemical Engineering Research and Design (1998), 76(A3), 319-334
CODEN: CERDEE; ISSN: 0263-8762
PUBLISHER: Institution of Chemical Engineers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB This paper follows on from preliminary work to investigate the theor. aspects of control of **dividing wall** columns in Part 1 of this paper. Two different control arrangements were investigated using temperature control. Dynamic simulation was first used to test the control configurations. These were then investigated in a large-scale pilot plant. The simulation and pilot plant runs show the same basic trends from the control arrangements. In all cases, the control arrangements investigated proved to give a stable response to fluctuations in the feed to the column. Temperature control resulted in an off-set in one of the product **purities**. This was demonstrated in both simulation and practical runs. A procedure was suggested to overcome this off-set by over-refluxing the column. The procedure allows the column to be designed for min. over-refluxing.

REFERENCE COUNT: 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 14 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:469893 CAPLUS
DOCUMENT NUMBER: 127:77367
TITLE: Ant pest control container
INVENTOR(S): Okano, Takayoshi; Yamashita, Fukuo
PATENT ASSIGNEE(S): Osaka Seiyaku K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09131154	A2	19970520	JP 1995-319669	19951113

PRIORITY APPLN. INFO.: JP 1995-319669 19951113

AB An ant bait container is partitioned to supply ≥2 gel baits. The general-**purpose** product shows long-term effectiveness and contains ≥2 edible components, because feeding habits depend on season, colony state, and type of ant, to assure ant colony destruction. Thus, a plastic container (60 mm internal diameter, 10 mm depth) was formed with a receptacle (30 mm internal diameter, 3 mm depth), divided into 2 sections, at the bottom. One side of the receptacle was filled with bait containing sugar and the other side with bait containing silkworm pupa powder, each of which contained boric acid as the pest control agent. The product was more efficient in aggregating ants, both in Aug. and Oct. and with 2 kinds of ants, than were containers from which the **dividing wall** was removed and that had 1 gel bait containing sugar, pupa powder, or a mixture of these components.

L8 ANSWER 15 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:410592 CAPLUS
DOCUMENT NUMBER: 127:36651
TITLE: Reactor for selective carbon monoxide oxidation in hydrogen-rich gas
INVENTOR(S): Strobel, Barbara; Heil, Dietmar; Benz, Uwe; Tillmetz, Werner
PATENT ASSIGNEE(S): Daimler-Benz A.-G., Germany
SOURCE: Ger. Offen., 8 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19539648	A1	19970507	DE 1995-19539648	19951025
DE 19539648	C2	19980226		

PRIORITY APPLN. INFO.: DE 1995-19539648 19951025

AB A compact isothermic reactor contains (1) reaction zones where a H2-rich gas and O2 or air are contacted to oxidize selectively CO which is contained in the gas and (2) cooling zones which are filled with a flowing cooling medium. The alternate reaction zones and cooling zones are stacked in the filter press mode by using foils covered with a catalyst (e.g., Pt and/or Ru on a Al2O3 or zeolite carrier) on the surface facing the reaction zone as **dividing walls**. The arrangement permits maintaining the optimum temperature during the exothermic reaction. The reactor is especially useful for refining of crude H2 produced from MeOH by steam reforming. The CO content is decreased by oxidation from 2-3 volume% to <40 ppm. The **purified** H2 is suitable for fuel cells.

L8 ANSWER 16 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:320851 CAPLUS
DOCUMENT NUMBER: 126:296980
TITLE: Procedure and apparatus for removal of soot particles from waste gases resulting from combustion of fuel oil or diesel fuel
PATENT ASSIGNEE(S): Kaluza, Bernhard, Germany
SOURCE: Ger. Offen., 8 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19636434	A1	19970320	DE 1996-19636434	19960907

PRIORITY APPLN. INFO.: DE 1996-19636434 A1 19960907
DE 1995-19533343 19950908

AB Soot particles are removed from waste gases by contacting with an absorption liquid (e.g., liquid paraffins in the form of mist or aerosol). The absorbed soot particles are separated from liquid paraffins by settling. The apparatus consists of (1) a main **purification** chamber for contacting of the absorption liquid with waste gases and (2) a sedimentation chamber

placed underneath the main **purification** chamber. Both chambers are separated by a perforated **dividing wall**. The sedimentation chamber is filled completely and the main **purification** chamber is filled partially with the absorption liquid An addnl. **purification** chamber containing ≥1 filter element is placed beyond the main **purification** chamber to remove entrained absorption liquid

L8 ANSWER 17 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:49412 CAPLUS
DOCUMENT NUMBER: 126:79686
TITLE: Utilization of closed-in-place underground storage tanks in the remediation of contaminated soils and groundwater
AUTHOR(S): Waltz, Michael D.
CORPORATE SOURCE: REMTECH, Edinboro, PA, USA
SOURCE: Biotechnology in Industrial Waste Treatment and Bioremediation, [International Symposium on the Implementation of Biotechnology in Industrial Waste Treatment and Bioremediation], Grand Rapids, Sept. 15-16, 1992 (1996), Meeting Date 1992, 359-374. Editor(s): Hickey, Robert F.; Smith, Gretchen. Lewis: Boca Raton, Fla.
CODEN: 63UIAH
DOCUMENT TYPE: Conference
LANGUAGE: English
AB Three USTs, each 40,000 gal in capacity, contained #4 fuel oil and were closed-in-place at a large refining plant. Tanks are 42 ft long, 10.5 ft in diameter, and lie beneath a roadway 30 ft in width between two buildings. Closure-in-place was selected to prevent potential damage to adjacent structures, maintain necessary roadway access, and avoid costly shoring and dewatering of an excavation pit. The nonfeasibility of tank and contaminated soil removal suggested in situ technol. One of the three closed-in-place USTs was utilized in the construction of an in situ bioremediation treatment system. A concrete floor was poured inside the underground tank to provide a level foundation for anchoring two **dividing walls**. One wall forms an open-top tank 18 ft long, 8 ft wide, and 2.5 ft high. The second wall forms an open-top tank 4 ft long, 8 ft wide, and 3 ft high. Groundwater pumped into the longer tank flows through a series of weirs where volatilization, oxygen saturation, and nutrient addition occur. Treated groundwater accumulates in the smaller tank for injection by one of three systems. Water is injected through drive points installed horizontally through the tank walls and a northern and southern series of injection wells. Initial assessment revealed free product on the groundwater surface between the tanks and the buildings. Microbiol. analyses indicated hydrocarbon-degrading bacteria were present. Dissolved oxygen and nutrient concns. in groundwater samples were low. Trends in the concns. of dissolved oxygen and nutrients at monitoring points during system operation suggest bioactivity. Soil borings installed adjacent to initial assessment soil borings 8 mo after system completion show total petroleum hydrocarbon (TPH) concns. in soils reduced from levels above 100,000 to <10 mg/kg.

L8 ANSWER 18 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:444468 CAPLUS
DOCUMENT NUMBER: 125:95173
TITLE: Advisory by the Science Advisory Board's (SAB) Drinking Water Committee (**DWC**) concerning the health significance of HPC bacteria eluted from POU/POE (Point of Use/Point of Entry) drinking water treatment devices
CORPORATE SOURCE: United States Environmental Protection Agency, Washington, DC, USA
SOURCE: Report (1996), EPA-SAB-DWC-ADV-96-002; Order No. PB96-164579GAR, 8 pp. Avail.: NTIS From: Gov. Rep. Announce. Index (U. S.) 1996, 96(14), Abstr. No. 14-01,306
DOCUMENT TYPE: Report
LANGUAGE: English
AB A summary is given of the Committee's comments and reactions to the Project and to the specific questions raised in the charge to the Committee. These questions are: (1) Is existing epidemiol. evidence sufficient to conclude that amplification of HPC concns. by POU/POE devices, used on centrally treated water, does not pose a threat of adverse health effects to the normal population; (2) If existing evidence is not sufficient, could the proposed research (especially the normal controls), potentially provide enough information to conclude there is no threat to the normal population. If not, what other research is needed; (3) Is there a need for addnl. research to assess the potential threat posed to immuno-compromised persons by elevated HPC concns. eluted from POU/POE devices (relative to other HPC exposures); (4) If so, what is the most appropriate type of research: animal studies, epidemiol. studies, or a combination; (5) If animal studies are appropriate, is the ORD research proposal a scientifically sound and adequate proposal for determining the potential threat to immuno-compromised persons. If not, how should it be modified.

L8 ANSWER 19 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:431599 CAPLUS
DOCUMENT NUMBER: 125:64776
TITLE: Magnesium melting furnace and melting of magnesium
INVENTOR(S): Schroeder, Dominik; Rauch, Erich
PATENT ASSIGNEE(S): Schmitz & Apelt Loi Industrieofenanlagen Gmbh, Germany; Rauch Fertigungstechnik Gmbh
SOURCE: PCT Int. Appl., 30 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9614439	A2	19960517	WO 1995-EP4232	19951027
WO 9614439	A3	19960815		
W: AU, CA, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2180351	AA	19960517	CA 1995-2180351	19951027
AU 9539258	A1	19960531	AU 1995-39258	19951027
EP 738334	A1	19961023	EP 1995-937021	19951027
EP 738334	B1	20011010		
R: AT, BE, DE, ES, FR, GB, IT, NL, SE				
AT 206770	E	20011015	AT 1995-937021	19951027
US 5908488	A	19990601	US 1996-669405	19960702
PRIORITY APPLN. INFO.:			DE 1994-4439214 A	19941103
			WO 1995-EP4232 W	19951027

AB The furnace has a plurality of chambers and the material to be melted is fed into a melting chamber through a charging chute that dips under the surface of the melting bath. The melt is slowly transferred into a holding chamber through a passage situated in the lower 3rd of a **dividing wall** above a layer of impurities settling at the bottom of the melting chamber. The melt flows slowly through the holding chamber, with impurities rising to the surface or settling to the bottom. The **purified** melt flows through a 2nd passage situated in the lower 3rd of a 2nd **dividing wall** into a metering chamber. The melt can be removed from the metering chamber through a transfer pipe by using a metering pump. The furnace makes it possible simultaneously to melt, **purify** and remove metered amts. of Mg.

L8 ANSWER 20 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1993:606072 CAPLUS
DOCUMENT NUMBER: 119:206072
TITLE: The control of **dividing wall** column
AUTHOR(S): Lestak, F.; Smith, R.
CORPORATE SOURCE: Cent. Process Integrat., UMIST, Manchester, UK
SOURCE: Chemical Engineering Research and Design (1993), 71(A3), 307
CODEN: CERDEE; ISSN: 0263-8762
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Good control performance of a **dividing wall** distillation column (**DWC**) can be achieved by placing a decoupler against the most serious interactions. In comparison with a simple column sequence, the **DWC** is easier to control, with only 4 **purity** control loops in a simple sequence and only 3 **pure** products. As the number of loops is decreased, the level of interactions is lower. In addition, there is no interaction between the top and bottom **purity** loops, as there is in a simple distillation column.

L8 ANSWER 21 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1989:459899 CAPLUS
DOCUMENT NUMBER: 111:59899
TITLE: Dispensing apparatus for milk of lime for sugar juice **purification**
INVENTOR(S): Dyba, Eugeniusz; Rut, Marian; Kowal, Jan; Grabowski, Zygmunt
PATENT ASSIGNEE(S): Cukrownie Dolnoslaskie, Pol.
SOURCE: Pol., 8 pp. Abstracted and indexed from the unexamined application.
CODEN: POXXA7
DOCUMENT TYPE: Patent
LANGUAGE: Polish
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PL 142495	B1	19871031	PL 1985-251880	19850206
PRIORITY APPLN. INFO.:			PL 1985-251880	19850206

AB The dispensing apparatus consists of a vertical container with a rectangular cross section, a prismatic bottom, a divider in the bottom section, and 2 bottom outlets. An inlet for milk of lime is in the form of an elastic tube provided with a nozzle. The nozzle is placed above the **dividing wall** and is movable by means of a servomotor to divide the exiting stream of milk of lime. A portion of the latter flows into the 1st section from which it is recycled. The other portion flows into the 2nd section from which it is charged for **purification** of the sugar juice. The arrangement provides continuous circulation of milk of lime, ensures good dispersion, and eliminates formation of solid deposits. The apparatus is illustrated.

L8 ANSWER 22 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1988:411503 CAPLUS
DOCUMENT NUMBER: 109:11503
TITLE: Model of mass transfer in a grain of nonuniformly porous activated carbon
AUTHOR(S): Mamchenko, A. V.
CORPORATE SOURCE: Inst. Kolloidn. Khim. Khim. Vody, Kiev, USSR
SOURCE: Khimiya i Tekhnologiya Vody (1988), 10(2), 99-102
CODEN: KTVODL; ISSN: 0204-3556
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB A model for mass transfer in a grain of activated C assumes merging of adjacent micropores by the destruction of **dividing walls** with the formation of larger pores, permeable by the adsorbed substance.

L8 ANSWER 23 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1986:634174 CAPLUS
DOCUMENT NUMBER: 105:234174
TITLE: Three Mile Island Unit 2 dry-canal defueling water cleanup system--an update
AUTHOR(S): Katonak, L. E.; Hitz, C. G.
CORPORATE SOURCE: Bechtel Natl. Inc., Oak Ridge, TN, USA
SOURCE: Waste Management (Tucson, Arizona) (1985), (2), 363-8
CODEN: PSWMDY; ISSN: 0275-6196
DOCUMENT TYPE: Journal
LANGUAGE: English
AB During the defueling phase of the TMI-2 cleanup effort, the reactor vessel (RV) with internals indexing fixture (IIF), the refueling canal, and the spent fuel pool will be partially filled with water to enable the fuel transfer operation to occur safely. This water must be maintained at a 137Cs concentration of 0.01 to 0.02 μCi/mL and a clarity level of approx. 1 nephelometric turbidity unit (NTU). These criteria were selected to ensure that radiation dose rates to workers 1 ft above the defueling platform are maintained as low as reasonably achievable (ALARA), and to maintain sufficient water clarity to allow workers to see underwater components in the vessel, refueling canal, and spent fuel pool during the defueling operation. A defueling water cleanup system (**DWCS**) was designed to meet these objectives. Two subsystems constitute the **DWCS**. One subsystem processes water within the vessel IIF (a cylindrical extension of the vessel) with a 400 gpm design basis flowrate for filtration and a 60 gpm flowrate for ion exchange. The other subsystem processes refueling/spent fuel pool water with a 400 gpm filtration system and a 30 gpm ion-exchange system.

L8 ANSWER 24 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1986:229954 CAPLUS
DOCUMENT NUMBER: 104:229954
TITLE: Apparatus for anaerobic **purification** of wastewaters
INVENTOR(S): Novotny, Josef
PATENT ASSIGNEE(S): Czech.
SOURCE: Czech., 4 pp.
CODEN: CZXXA9
DOCUMENT TYPE: Patent
LANGUAGE: Czech
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CS 220724	B	19830429	CS 1981-4515	19810617
PRIORITY APPLN. INFO.:			CS 1981-4515	19810617

AB An apparatus for anaerobic treatment of wastewaters consists of a vessel divided into a settling chamber and a fermentation chamber. **Dividing walls** do not reach to the bottom providing a passage. The vessel is closed at the top and is provided with a service shaft at its short side. In the shaft, a winch is mounted for a cable connected with a float having an attached cleaning chain. The latter is used for cleaning the passage between the chambers. The apparatus is suitable for wastewater treatment in settlements having ≤150 people.

L8 ANSWER 25 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1986:41584 CAPLUS
DOCUMENT NUMBER: 104:41584
TITLE: Defueling filter test
AUTHOR(S): Storton, J. M.; Kramer, J. F.
CORPORATE SOURCE: Res. Dev. Div., Babcock and Wilcox, Lynchburg, VA,

24506-1165, USA
SOURCE: ACS Symposium Series (1986), 293(Three Mile Isl. Accid.), 239-49
CODEN: ACSMC8; ISSN: 0097-6156
DOCUMENT TYPE: Journal
LANGUAGE: English
AB TMI-2 sustained core damage creating a significant quantity of fine debris, which can become suspended during the planned defueling operations and will have to be constantly removed to maintain water clarity and minimize radiation exposure. To accomplish these objectives, a Defueling Water Cleanup System (**DWCS**) was designed. One of the primary components in the **DWCS** is a custom designed filter canister using an all stainless steel filter medium. The full scale filter canister is designed to remove suspended solids from 800 to 0.5 μ in size. Filter cartridges were fabricated into an element cluster to provide for a flow rate of >100 gal/min and tested with simulated solid suspensions of 1400 and 140 ppm in borated water (5000 ppm B). Test data enabled a full-scale filter canister to be generated.

L8 ANSWER 26 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:444353 CAPLUS
DOCUMENT NUMBER: 103:44353
TITLE: Three Mile Island Unit 2 defueling water cleanup system
AUTHOR(S): Bell, W. H.; Rao, K. B.
CORPORATE SOURCE: Bechtel Natl. Inc., Oak Ridge, TN, USA
SOURCE: Waste Management (Tucson, Arizona) (1984), (2), 489-94
CODEN: PSWMDY; ISSN: 0275-6196
DOCUMENT TYPE: Journal
LANGUAGE: English
AB During the defueling operations of the damaged TMI-2 reactor, it is necessary to fill the reactor vessel, refueling canal and spent fuel pool with water to conduct fuel transfer operations. This water must be maintained at a 137Cs concentration of 0.02 μCi/mL and a clarity level of 1 NTU. These criteria were selected to ensure that radiation dose rates to workers on the fuel handling bridge above the reactor vessel and in the fuel handling building are maintained as low as reasonably achievable (ALARA) and to maintain sufficient water clarity to enable workers to see underwater components in the reactor vessel, refueling canal, and spent fuel pool during defueling operations. To meet these objectives a defueling water cleanup system (**DWCS**) was designed which consists of 2 sep. subsystems. One system processes the water within the reactor vessel and a cylindrical contamination barrier to be placed above the reactor vessel with a design basis filtration system flow rate of 400-gal/min and a soluble fission product removal ion exchange system of 60-gal/min. The other system processes the water in the refueling canal and spent fuel pool with a 400-gal/min filtration system and a 15-gal/min ion exchange system.

L8 ANSWER 27 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1981:5191 CAPLUS
DOCUMENT NUMBER: 94:5191
TITLE: High-performance countercurrent distribution (HPCD)
AUTHOR(S): Brenner, M.; Mueller, F.; Bentz, R.; Streb, B.; Walliser, H. P.
CORPORATE SOURCE: Inst. Org. Chem., Univ. Basle, Basle, 4056, Switz.
SOURCE: Pept., Struct. Biol. Funct., Proc. Am. Pept. Symp., 6th (1979), 91-7. Editor(s): Gross, Erhard; Meienhofer, Johannes. Pierce Chem. Co.: Rockford, Ill.
CODEN: 44LVAU
DOCUMENT TYPE: Conference
LANGUAGE: English
AB A prototype of a machine for batch or continuous preparative separation, e.g., for peptide **purification**, is discussed. The separation chamber is cylindrical, with radius 5 and length 1 cm, and 20 or 50 adjacent chambers make up a separation cylinder. Communication between chambers is provided by a small hole in each **dividing wall**. Two or more separation cylinders make up a separation train. The holes are located on a straight line along the train. One of the phases forms a film that wets the chamber walls. Its use is discussed.

L8 ANSWER 28 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1979:528539 CAPLUS
DOCUMENT NUMBER: 91:128539
TITLE: Deep well biological **purification**: a new technology and its application to paper industry wastes
AUTHOR(S): Vigreux, B.; Caillol, A.
CORPORATE SOURCE: Soc. Gen. Tech. Nouvelles, Fr.
SOURCE: Papier, Carton & Cellulose (1979), 28(6), 60-3
CODEN: PCCLAK; ISSN: 0031-1367
DOCUMENT TYPE: Journal
LANGUAGE: French
AB Biol. treatment in wells 30-150-m deep having a concentric **dividing wall** reaching nearly to the bottom of the well provides adequate **purification** of the waste with only a small amount of excess sludge production BOD5 and COD were reduced from 212 and 496 to 22 and 7 mg/L in a pilot plant.

L8 ANSWER 29 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1977:443767 CAPLUS
DOCUMENT NUMBER: 87:43767
TITLE: Sewage treatment system
INVENTOR(S): Teller, Ray E.; Zachar, Sem G.
PATENT ASSIGNEE(S): USA
SOURCE: U.S., 7 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 4021347	A	19770503	US 1976-647670	19760109
PRIORITY APPLN. INFO.:			US 1976-647670 A	19760109

AB The apparatus consists of an elongated, preferably cylindrical tank, for underground installation with its long axis horizontal. The major portion of the tank is an aeration compartment with a plurality of diffusers for the injection of air bubbles into the sewage as it flows from the inlet to pass over the edge of a **dividing wall** into the settling compartment, whence foam, floating solids, and settled solids are removed and returned to the inlet end of the aeration compartment. The sewage then passes through ≥1 filtering screens to a 3rd section and then through the outlet to a further treatment section where it is forced to flow in an elongated path by baffles and is mixed with O3 or Cl, which **purify** the effluent so that it can usually be discharged to natural waterways.

L8 ANSWER 30 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1977:411443 CAPLUS
DOCUMENT NUMBER: 87:11443
TITLE: Ion-exchange filter
INVENTOR(S): Larichev, V. I.; Bolotov, P. A.; Torlina, V. N.; Lotarev, V. I.; Dobrin, B. I.
PATENT ASSIGNEE(S): USSR
SOURCE: U.S.S.R. From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1976, 53(27), 14.
CODEN: URXXAF

DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 521904	T	19760725	SU 1974-2064395	19741004
PRIORITY APPLN. INFO.:			SU 1974-2064395 A	19741004

AB An ion-exchange filter comprised a vessel divided into chambers by the vertical impermeable walls, a drain device, and a water-distributing device; the chambers were filled with a filtering material. To eliminate the influence of temperature of the water being filtered on the filtering material and to thus increase the **purity** of the treated water, the **dividing walls** were provided with horizontal channels, the outer of which, along with the walls of the case, formed cooling chambers. Each chamber was provided with an outlet tube.

L8 ANSWER 31 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1977:411442 CAPLUS
DOCUMENT NUMBER: 87:11442
TITLE: Portable ion-exchange filter for the **purification** of water
INVENTOR(S): Shilakadze, M. E.; Iosava, G. D.
PATENT ASSIGNEE(S): USSR
SOURCE: U.S.S.R. From: Otkrytiya, Izobret., Prom. Obraztsy, Tovarnye Znaki 1976, 53(27), 17.
CODEN: URXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Russian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
SU 521919	T	19760725	SU 1974-1997606	19740220
PRIORITY APPLN. INFO.:			SU 1974-1997606 A	19740220

AB The title filter comprised a case with a **dividing wall**, a cartridge with perforated bottom located inside the case, and a cover with slots. To increase the degree of the **purification** of the water by simultaneous demineralization, clarification, and disinfection in one filter, the case was provided with a cartridge holder, in which the ion-exchange cartridges (with different ion exchangers) were located; the cartridges were connected in series by channels, one of which was formed by the **dividing wall** and cartridge, the 2nd by the cartridge holder and a slot in the cover.

L8 ANSWER 32 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1977:145579 CAPLUS
DOCUMENT NUMBER: 86:145579
TITLE: Recovery of fresh water from salt-containing raw water by evaporation
INVENTOR(S): Starmer, Roy; Hutchinson, Malcolm
PATENT ASSIGNEE(S): Weir Westgarth Ltd., UK
SOURCE: Ger., 13 pp.
CODEN: GWXXAW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1517492	B2	19761014	DE 1962-R33373	19620823
DE 1517492	C3	19770526		
PRIORITY APPLN. INFO.:			GB 1961-30563 A	19610824
			GB 1962-968 A	19620110

AB The seawater trickles over the upper side of the zig-zag shaped **dividing walls** of the multistage cascade evaporator; the vapor which has evaporated from the thin film is led directly against the walls of the next chamber so that the heat from the thin film condensation is directly transfered to the water in the next chamber.

L8 ANSWER 33 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1975:64062 CAPLUS
DOCUMENT NUMBER: 82:64062
TITLE: Waste water **purification** apparatus
INVENTOR(S): Mochizuki Tadao; Kawada, Koichi
SOURCE: Ger. Offen., 19 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2304986	A1	19740214	DE 1973-2304986	19730201
DE 2304986	B2	19760325		
DE 2304986	C3	19761104		
PRIORITY APPLN. INFO.:			DE 1973-2304986 A	19730201

AB An upright waste water **purification** tank is separated into smaller and larger compartments by a vertical wall reaching almost to the top of the tank. At the lower end of the smaller compartment the waste water enters along with air under pressure. The aerated water flows over the **dividing wall** into the main compartment containing biol. active mud. The impurities gradually settle and are drawn off at the bottom of the tank while the **purified** water flows over the lowered edge of the water wall into an outlet gutter.

L8 ANSWER 34 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1974:124393 CAPLUS
DOCUMENT NUMBER: 80:124393
TITLE: Conveying apparatus for activated sludge
INVENTOR(S): Hofmeister, Franz
PATENT ASSIGNEE(S): GEFA Gesellschaft fuer Abwassertechnik m.b.H.
SOURCE: Ger. Offen., 15 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2232477	A1	19740110	DE 1972-2232477	19720701
PRIORITY APPLN. INFO.:			DE 1972-2232477 A	19720701

AB The apparatus for conveying activated sludge in compact sewage **purifn**. plants consisted of a pump vehicle, movable back and forth on the **dividing wall** between the activated-sludge and the afterclarifying tanks, with a suction device which reached to the vicinity of the bottom of the afterclarifying tank and connected with pipes to the activated-sludge tank and the sludge collector. The water concentration of the sucked sludge remained constant

L8 ANSWER 35 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1973:420742 CAPLUS
DOCUMENT NUMBER: 79:20742
TITLE: Adiabatic distillate evaporator
INVENTOR(S): Lukin, Yu. Ya.

PATENT ASSIGNEE(S): Kaliningrad Technical Institute of the Fishing Industry and Economy
SOURCE: Ger. Offen., 13 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2135685	A1	19730125	DE 1971-2135685	19710716
DE 2135685	B2	19770721		

PRIORITY APPLN. INFO.: DE 1971-2135685 A 19710716

AB An efficient, adiabatic, multistage saline water distillation apparatus for small-scale (≤50 tons/day) production consists of one or more vertical shell-and-tube condensers surrounded by a short, cylindrical evaporation chamber. The chamber and the condenser are segmented along their entire length by radially disposed vertical separating walls into a number of stages. In the case of multi-condenser design, each stage consists of a chamber sector containing a smaller cylindrical condenser. Openings in the **dividing walls** of the evaporating chamber allow preheated saline water to flow from 1 evaporating stage to the next. Similar connections between the condenser sectors or condensers allow steam, distillate, and noncondensible gases to flow consecutively through adjoining condensing stages. Since it is multistage, even though of small capacity, it uses less heat (150-180 kcal/kg at 30 tons/day with 8-10 stages), it occupies 30% less space, and it needs less condenser area.

L8 ANSWER 36 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1971:77715 CAPLUS
DOCUMENT NUMBER: 74:77715
TITLE: Device for the agglomeration and precipitation of suspended matter from gases and vapors
INVENTOR(S): Petersen, Gerd
SOURCE: Ger. Offen., 23 pp. Addn. to Ger. Offen. 1,926,651
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1934229	A	19710128	DE 1969-1934229	19690705
DE 1934229	B	19711028		
DE 2015737	A	19711021	DE 1970-2015737	19700402
DE 2015737	B2	19800925		
DE 2015737	C3	19811015		
CH 536130	A	19730615	CH 1970-8736	19700610
FR 2056320	A5	19710514	FR 1970-23284	19700624
GB 1315539	A	19730502	GB 1970-32394	19700703

PRIORITY APPLN. INFO.: DE 1969-1934229 A 19690705
DE 1970-2015737 A 19700402

AB Addition to Ger. Offen. 1,926,651. A device is described for the **purification** of gases and vapors from fine mist and dust particles which has rotating chambers with **dividing walls**, wires, and nets as separators and jets to moisten the gases which are supplied through the center, flow in any direction and are accelerated by centrifugal forces. The chambers are surrounded by a perforated cylinder, a dense net, or grid.

L8 ANSWER 37 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1971:46763 CAPLUS
DOCUMENT NUMBER: 74:46763
TITLE: Crystallization column
INVENTOR(S): Schuetz, Gerhard Z.
PATENT ASSIGNEE(S): Sulzer, Gebr., A.-G.
SOURCE: Ger. Offen., 13 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2020664	A	19701217	DE 1970-2020664	19700428
CH 509090	A	19710630	CH 1969-509090	19690609
CH 525014	A	19720715	CH 1970-525014	19700415
FR 2052450	A5	19710409	FR 1970-19450	19700527
NL 7007831	A	19701211	NL 1970-7831	19700529
GB 1248714	A	19711006	GB 1970-1248714	19700608

PRIORITY APPLN. INFO.: CH 1969-8760 A 19690609
CH 1970-5570 A 19700415

AB A crystallization column suitable for industrial **purposes** has perforated **dividing walls** movable by means of a cam or vibrator arrangement to enable sufficient exchange between the crystallized and liquid phases.

L8 ANSWER 38 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1970:459127 CAPLUS
DOCUMENT NUMBER: 73:59127
TITLE: Continuous waste water **purification**
INVENTOR(S): Wieland, Guenter; Wolf, Herbert
PATENT ASSIGNEE(S): Steinmueller, L. und C., G.m.b.H.
SOURCE: Ger. Offen., 8 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1813886	A	19700716	DE 1968-1813886	19681211

PRIORITY APPLN. INFO.: DE 1968-1813886 19681211

AB An apparatus for the continuous **purification** of waste water is described in which oil and other substances are separated by sedimentation, flocculation, filtration, and adsorption in a container with inclined bottom and chambers with **dividing walls**.

L8 ANSWER 39 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1969:89121 CAPLUS
DOCUMENT NUMBER: 70:89121
TITLE: Unit for the separation of carbon dioxide from combustion gases
INVENTOR(S): Furca, Emeric; Gutenkunst, Ludovic; Dane, Andrei
PATENT ASSIGNEE(S): Romania, Machine Construction Works
SOURCE: Rom., 5 pp.
CODEN: RUXXA3
DOCUMENT TYPE: Patent
LANGUAGE: Romanian
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
RO 51290		19681008	RO	19640828

AB Combustion gases are mixed with water passing through an injector. The mixture is collected in a dissolving tank with a **dividing wall** which forms 2 equal compartments. There the CO2 is dissolved in the water, while the less-soluble gases escape through a stack on top of the tank. The tank is also fitted with an overflow for the draining of the excess water, situated at a higher level than the **dividing wall**. The water containing the CO2 flows over the **dividing wall** to the 2nd compartment of the dissolving tank. Then it flows to a communicating degassing tank likewise fitted with a **dividing wall**. Combustion gases passing through a heat exchanger heat the water in the tank and the dissolved gases are aspirated into a tank. The passage over the **dividing wall** facilitates the degassing. The degassed water is cooled by a heat exchanger and recirculated to the dissolving tank. The gases from the tank are recirculated to increase the CO2 concentration to the desired level. For this **purpose**, 2 installations can be connected in series, where the gases from the 1st degassing tank pass to a 2nd analogous installations for the increase of the CO2 concentration and finally to the gas tank.

L8 ANSWER 40 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1965:416199 CAPLUS
DOCUMENT NUMBER: 63:16199
ORIGINAL REFERENCE NO.: 63:2835h,2836g-h,2837a-c
TITLE: Safety design criteria for explosives and high energy propellant manufacturing and storage facilities
AUTHOR(S): Saffian, L. W.; Rindner, R. M.
CORPORATE SOURCE: Picatinny Arsenal, Dover, NJ
SOURCE: Am. Chem. Soc., Div. Fuel Chem., Preprints (1963), 7(3), 117-59
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Quant., realistic criteria are desired for optimum design of protective structures to prevent propagation of explosion, injury to personnel, and damage of material. The overall program consists of three phases: (1) prevention of propagation and personnel injury due to **pure** blast effects; (2) the effects of primary fragment impacts resulting from rupture of the donor explosive casing in causing explosion propagation; and (3) the development of design criteria for barricades and substantial **dividing walls** for prevention of explosion propagation and personnel injury. In phases 1 and 2, methods are described for establishing quant. design criteria for explosive and high-energy propellant facilities relating to prevention of explosion propagation by blast and fragment impact effects. The methods presented are based on prediction of large-scale behavior of these materials employing relations which require data from small-scale tests only. Relations are also developed which permit the calcn. of safe distances for prevention of propagation of detonation due to fragment impact between adjacent potentially mass detonating explosive systems for any assumed degree of risk and degree of steel casting. These relations permit prediction of probability of propagation in an existing situation as well as calcn. of necessary changes in acceptor shielding and (or) separation distances for any other tolerable degree of risk. In Phase 3, a quant. method for realistic design of protective walls or combinations of walls (manufacturing bay or storage cubicle) is outlined. Consideration is given to such factors as donor effects, wall responses, and acceptor sensitivity (personnel, equipment, or another explosive charge) to the effects of donor detonation. Special emphasis is placed on close-in effects of donor detonation where non-uniformity of wall loading makes the application of the plane wave theory not valid. The donor charge which determine the blast loads and primary fragments is discussed in terms of various parameters such as pressure and impulse patterns formed on the wall surface as a function of donor characteristics. Wall responses (to the blast loads resulting from the donor explosion) are discussed in terms of various modes of wall failure which may impair structural integrity of the wall. These are: (1) spalling (causing formation of secondary fragments); (2) punching (local shear failure causing formation of secondary fragments); (3) flexural failure (caused by overall flexing action of the wall which brings the wall to the point of incipient breakup); (4) total destruction of the wall (causing complete breakup into secondary fragments); (5) penetration of the wall by primary missiles (resulting in either perforation of the wall or spalling). Various degrees of wall support as well as different types of wall construction including sandwich-type walls are also discussed. Acceptor sensitivity is discussed in terms of either total protection level (for personnel and equipment) where essentially no damage to the wall can be tolerated or lesser degrees of protection against propagation of explosion.

L8 ANSWER 41 OF 41 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1910:17685 CAPLUS
DOCUMENT NUMBER: 4:17685
ORIGINAL REFERENCE NO.: 4:3166g-i
TITLE: Electrolytic Preparation of Copper Sulphate from Cement Waters
AUTHOR(S): Rambaldini, G. B.
SOURCE: Ind. chim. (1910), 9, 1-4
From: Chem. Zentr., 1909, I, 1675
DOCUMENT TYPE: Journal
LANGUAGE: Unavailable
AB The lower half of a cell is divided into 2 compartments by a non-conducting wall and each is partly filled with the cement water and dilute CuSO4, resp., and enough dilute H2SO4 poured in to cover the **dividing wall**. Cu electrodes are used in each compartment, the one in the cement water being made the cathode. By interchanging the electrodes and renewing the liquids, a **pure** Cu solution is obtained continuously.

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=> S DIVIDING WALL AND DISTILLATION
         22169 DIVIDING
            22 DIVIDINGS
         22189 DIVIDING
                 (DIVIDING OR DIVIDINGS)
        280725 WALL
        127969 WALLS
        363351 WALL
                 (WALL OR WALLS)
           319 DIVIDING WALL
                 (DIVIDING(W)WALL)
         53054 DISTILLATION
           377 DISTILLATIONS
         53190 DISTILLATION
                 (DISTILLATION OR DISTILLATIONS)
        173904 DISTN
          1765 DISTNS
        174640 DISTN
                 (DISTN OR DISTNS)
        188758 DISTILLATION
                 (DISTILLATION OR DISTN)
L9          54 DIVIDING WALL AND DISTILLATION

=> S L9 AND TEDA
           348 TEDA
L10          0 L9 AND TEDA

=> S L9 AND TRIETHYL?
        112737 TRIETHYL?
L11          0 L9 AND TRIETHYL?

=> S L9 NOT L8
L12         44 L9 NOT L8
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=> D 1-44 IBIB ABS

L12 ANSWER 1 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:185244 CAPLUS
DOCUMENT NUMBER: 144:256927
TITLE: Hydrocracking process for the production of ultra low sulfur diesel
INVENTOR(S): Kalnes, Tom N.
PATENT ASSIGNEE(S): UOP LLC, USA
SOURCE: U.S., 9 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 7005057	B1	20060228	US 2002-238511	20020905
PRIORITY APPLN. INFO.:			US 2002-238511	20020905

AB A catalytic hydrocracking process for the production of ultra low sulfur diesel wherein a hydrocarbonaceous feedstock is hydrocracked at elevated temperature and pressure to obtain conversion to diesel boiling range hydrocarbons. The resulting hydrocracking zone effluent is hydrogen stripped in a stripping zone maintained at essentially the same pressure as the hydrocracking zone to produce a first gaseous hydrocarbonaceous stream and a first liquid hydrocarbonaceous stream. The first gaseous hydrocarbonaceous stream containing diesel boiling range hydrocarbons is introduced into a desulfurization zone and subsequently partially condensed to produce a hydrogen-rich gaseous stream and a second liquid hydrocarbonaceous stream containing diesel boiling range hydrocarbons. At least a portion of the first liquid stream is separated in a **dividing wall** column to produce a liquid hydrocarbonaceous stream containing diesel boiling range hydrocarbons which is also introduced into the desulfurization zone. An ultra low sulfur diesel product stream is recovered.
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 2 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:1141802 CAPLUS
DOCUMENT NUMBER: 143:442793
TITLE: The study of the model predictive control strategy on the **dividing-wall distillation** column
AUTHOR(S): Jiang, Shr-Tze; Ke, Jing-Wei; Chan, Wan-Rung; Shiu, Shing-Jia; Tsai, Ming-Jang; Hung, Jeng-Tzung
CORPORATE SOURCE: Refining and Manufacturing Research Institute, Chinese Petroleum Corporation, Chiayi City, 60059, Taiwan
SOURCE: Shiyou Jikan (2005), 41(3), 1-11
CODEN: SYCKE4; ISSN: 1022-9671
PUBLISHER: Chinese Petroleum Institute
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB The b.p. of the side stream of a continuous **distillation** column is between that of the top and bottom products. Due to the closeness of the position to the feed, the quality of the side stream is easily disturbed by variations in the feed stream. This leads to a two-column system to be used for the separation Therefore, putting a **dividing wall** in certain section of a column to sep. the feed and side stream, the quality of the side stream will not be disturbed by the feed. The energy consumption and the equipment cost of the **dividing-wall** column are 30% lower than those of the two-column system. However, the difficulty in tray design and the complexity in the operation of a **dividing-wall** column limit its application. The control strategy is discussed of the **dividing-wall** column. To testing the performance of the control system, a laboratory-scale **dividing-wall distillation** column was constructed. Applying the model predictive control technique to the **dividing-wall** column, the qualities of the both top and bottom as well as the side stream products were controlled by using a 3 + 3 multivariable process for the column temperature at three different positions. The exptl. results demonstrate a good performance for applying model predictive control technique to the **dividing-wall** column. However, the long time continuous operation was not tested due to the limitation of the manpower. The reflux rate was controlled by a metering pump. The ratio of internal flow rate in both side of the **dividing-wall** was controlled by the two flow controllers. In this study, internal flow rates in both side of the **dividing-wall** were the same. The column performance is affected by the internal flow rates in the both side of the **dividing-wall**. A study of this ratio to the controllability of the multivariable control system will be performed in the future.

L12 ANSWER 3 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:975871 CAPLUS
DOCUMENT NUMBER: 143:248797
TITLE: Manufacture of (meth)acrylate esters via purification by **distillation**
INVENTOR(S): Endo, Toru; Ogawa, Akira
PATENT ASSIGNEE(S): Mitsubishi Rayon Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005239564	A2	20050908	JP 2004-47586	20040224
PRIORITY APPLN. INFO.:			JP 2004-47586	20040224

AB The (meth)acrylate esters are manufactured via purification by **distillation** using apparatus equipped with **dividing wall** columns. Thus, a reaction mixture, given by transesterification of Me methacrylate with BuOH, was mixed with a polymerization inhibitor and applied to a **dividing wall** column. A fraction from the middle of the column was condensed to give Bu methacrylate containing 52 ppm Me methacrylate and <0.5 ppm polymerization inhibitor.

L12 ANSWER 4 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:728544 CAPLUS
DOCUMENT NUMBER: 143:213498
TITLE: Consider **dividing wall distillation** to separate solvents. Using an established technology as part of a revamp installation provided new products at lower capital and operating costs than conventional methods
AUTHOR(S): Spencer, G.; Ruiz, F. J. Plana
CORPORATE SOURCE: Stoke on Trent, Koch-Glitsch UK, UK
SOURCE: Hydrocarbon Processing (2005), 84(7), 90-94
CODEN: HPYRAF
PUBLISHER: Gulf Publishing Co.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A refinery applied optimized process simulation models for conventional **distillation** sequences and for sequences using a **dividing wall** column, to optimize the separation efficiency in **distillation**

The background of **dividing wall distillation** is outlined, and the process was applied to the separation of hexane and heptane, demonstrating that capital costs and energy costs could be saved.

REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 5 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:727064 CAPLUS
DOCUMENT NUMBER: 143:175931
TITLE: Fractionation and treatment of full-boiling-range gasoline
INVENTOR(S): Schultz, Michael A.; Weiszmann, Joseph A.
PATENT ASSIGNEE(S): Uop Llc, USA
SOURCE: U.S., 7 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6927314	B1	20050809	US 2002-198196	20020717
PRIORITY APPLN. INFO.:			US 2002-198196	20020717

AB A process to increase the octane number of a naphtha-boiling-range feed stock has been developed. Using a **dividing wall** column, the feed stock is separated into a light fraction comprising compds. containing five carbon atoms or less, an intermediate fraction containing largely compds. having six carbon atoms, and a heavy fraction which comprises compds. containing more than six carbon atoms. The light and heavy fractions are passed to a gasoline-blending pool. The intermediate fraction is isomerized to increase the octane number of the intermediate fraction and form an isomerate. The isomerate is passed to the gasoline-bending pool.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 6 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:580377 CAPLUS
DOCUMENT NUMBER: 143:61799
TITLE: Status and development trends of **dividing wall** column at home and abroad
AUTHOR(S): Qiu, Zhao-rong; Ye, Qing; Li, Cheng-yi
CORPORATE SOURCE: Department of Chemical Engineering, Jiangsu Polytechnic University, Changzhou, 213016, Peop. Rep. China
SOURCE: Jiangsu Gongye Xueyuan Xuebao (2005), 17(1), 58-61
CODEN: JGXUBD
PUBLISHER: Jiangsu Gongye Xueyuan Xuebao Bianjibu
DOCUMENT TYPE: Journal; General Review
LANGUAGE: Chinese
AB A review. The **dividing wall** column (DWC) has been in use in chemical industry for the last 20 years. The DWC is now considered the accepted technol. (some 40 columns in operation at BASF) and is expected to grow steadily in number and applications in industrial practice. Investment costs are cut by 30%, operating costs by around 30%. More then 33 patents in America and more then 5 patents in China were obtained in the petrochem. field. The principle, structure, energy saving, and key technol. of DWC are reviewed. The applications and the possible applications areas of the DWC are introduced and future application prospect of the DWC is presented.

L12 ANSWER 7 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:430048 CAPLUS
DOCUMENT NUMBER: 142:483999
TITLE: **Dividing wall distillation** comes of age
AUTHOR(S): Jobson, Megan
CORPORATE SOURCE: Centre for Process Integration, School of Chemical Engineering and Analytical Science, University of Manchester, UK
SOURCE: Tce (2005), 766, 30-31
CODEN: TCEAB8
PUBLISHER: Institution of Chemical Engineers
DOCUMENT TYPE: Journal; General Review
LANGUAGE: English
AB A review. **Dividing wall distillation** is described as an established technol., and by steady state simulations the perceived risks and benefits of this technol. could be assessed. Dynamic modeling is also described as a useful tool to evaluate the stability of typical feed and quality disturbances.

L12 ANSWER 8 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:17906 CAPLUS
DOCUMENT NUMBER: 142:158639
TITLE: Minimal energy requirements of **dividing-wall** columns
AUTHOR(S): Poth, Nikolaus; Brusis, Dirk; Stichlmair, Johann
CORPORATE SOURCE: Lehrstuhl fuer Fluidverfahrenstechnik, Technische Universitaet Muenchen, Garching, D-85747, Germany
SOURCE: Chemie Ingenieur Technik (2004), 76(12), 1811-1814
CODEN: CITEAH; ISSN: 0009-286X
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: German
AB The min. energy demand of a **dividing-wall** column for separation of an ideal ternary mixture was investigated and compared with that of alternative **distillation** processes. Separation by a **dividing-wall** column (with lateral discharge of the medium-boiling component) requires least energy among all **distillation** processes without thermal coupling. Extension of the **dividing-wall** into the head or bottom space lets the energy demand increase. Further energy saving is only possible by thermal coupling which requires, however, expensive pressure staging. In both cases, with and without thermal coupling, the so-called preferred path, i.e. initial separation into 2 binary mixts. (both containing medium-boiling component together with either the higher- or the lower-boiling one) and their subsequent separation in the 2nd step (the **dividing-wall** column works after this principle too), is optimal from the energetic point of view.

L12 ANSWER 9 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:260873 CAPLUS
DOCUMENT NUMBER: 140:341180
TITLE: Industrial use of **dividing-wall** columns and thermally coupled **distillation** columns
AUTHOR(S): Kaibel, Gerd; Miller, Christian; Stroezel, Manfred; von Watzdorf, Ruediger; Jansen, Helmut
CORPORATE SOURCE: BASF AG, Ludwigshafen, D-67056, Germany
SOURCE: Chemie Ingenieur Technik (2004), 76(3), 258, 260-263
CODEN: CITEAH; ISSN: 0009-286X
PUBLISHER: Wiley-VCH Verlag GmbH & Co. KGaA
DOCUMENT TYPE: Journal
LANGUAGE: German
AB Constructional features, design variants, and technol. advantages of **dividing-wall** and thermally coupled **distillation** columns are described. The basic design of a **dividing-wall** column is characterized by an internal vertical wall reaching

over a certain distance from below to above the level of the feeding site. This allows to obtain 3 or even 4 fractions from a sole column by arranging 1 or 2 lateral discharge sites in addition to top and bottom discharge. Energy savings result from the absence of any mixing entropy on the feeding tray. However, great temperature spreading may require high columns. This temperature spreading is decreased by using thermally coupled columns (owing to different pressures in the individual columns), while the advantage of the absence of mixing entropy at the site of feeding is maintained. There are 4 variants of arranging 2 thermally coupled columns.

L12 ANSWER 10 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:3345 CAPLUS
DOCUMENT NUMBER: 140:61315
TITLE: **Distillation** process for separating 1-methoxy-2-propanol and 2-methoxy-1-propanol from propylene oxide-production wastewater
INVENTOR(S): Hofen, Willi; Gehrke, Helmut; Kolbe, Barbel; Wilken, Dieter; Gehlen, Carsten; Kampeis, Percy
PATENT ASSIGNEE(S): Germany
SOURCE: U.S. Pat. Appl. Publ., 11 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004000473	A1	20040101	US 2003-463780	20030617
PRIORITY APPLN. INFO.:			US 2002-389896P	P 20020620

AB A process for separating 1-methoxy-2-propanol and 2-methoxy-1-propanol from propylene oxide-production wastewater, comprises: (a) dewatering of the aqueous composition containing 1-methoxy-2-propanol and 2-methoxy-1-propanol to a concentration of
1-methoxy-2-propanol and 2-methoxy-1-propanol of ≥90% in total; and (b) isolation of 1-methoxy-2-propanol and/or 2-methoxy-1-propanol or their mixts. from the product of step (a) by means of **distillation** Process flow diagrams are presented.

L12 ANSWER 11 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:2825 CAPLUS
DOCUMENT NUMBER: 140:61313
TITLE: **Distillation** process for separating 1-methoxy-2-propanol and 2-methoxy-1-propanol from propylene oxide-production wastewater
INVENTOR(S): Hofen, Willi; Gehrke, Helmut; Kolbe, Baerbel; Wilken, Dieter; Gehlen, Carsten; Kampeis, Percy
PATENT ASSIGNEE(S): Degussa A.-G., Germany; Uhde G.m.b.H.
SOURCE: PCT Int. Appl., 27 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004000773	A1	20031231	WO 2003-EP6522	20030620
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
EP 1375462	A1	20040102	EP 2002-13677	20020620
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
AU 2003249854	A1	20040106	AU 2003-249854	20030620
PRIORITY APPLN. INFO.:			EP 2002-13677	A 20020620
			WO 2003-EP6522	W 20030620

AB A process for separating 1-methoxy-2-propanol and 2-methoxy-1-propanol from propylene oxide-production wastewater, comprises: (a) dewatering of the aqueous composition containing 1-methoxy-2-propanol and 2-methoxy-1-propanol to a concentration of
1-methoxy-2-propanol and 2-methoxy-1-propanol of ≥90% in total; and (b) isolation of 1-methoxy-2-propanol and/or 2-methoxy-1-propanol or their mixts. from the product of step (a) by means of **distillation**
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 12 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:348696 CAPLUS
DOCUMENT NUMBER: 138:340271
TITLE: **Dividing wall** fractionation column control system and apparatus
INVENTOR(S): Steacy, Paul C.
PATENT ASSIGNEE(S): UOP LLC, USA
SOURCE: U.S., 7 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6558515	B1	20030506	US 2001-840543	20010423
PRIORITY APPLN. INFO.:			US 2001-840543	20010423

AB A control method and apparatus for regulating the rate of vapor flow in the two adjacent sections of a **dividing wall** fractional **distillation** column are presented. The liquid level on a tray at the top of each section is used to control the rate of vapor flow through the tray. The liquid level is controlled by measuring the pressure differential across the tray in each section and varying the flow of liquid to this tray in response to the differential.
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 13 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:312692 CAPLUS
DOCUMENT NUMBER: 138:323706
TITLE: Fractionation in light paraffin isomerization process for butane desorbent recovery
INVENTOR(S): Rice, Lynn H.
PATENT ASSIGNEE(S): UOP LLC, USA
SOURCE: U.S., 8 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6552242	B1	20030422	US 2001-948979	20010907

PRIORITY APPLN. INFO.: US 2001-948979 20010907

AB A process for recovering high-octane, di-branched paraffins from the raffinate stream of an adsorptive separation process, comprises: (a) passing a raffinate stream removed from an adsorptive separation zone, which stream comprises a desorbent hydrocarbon, mono-branched paraffins and di-branched paraffins, into a fractional **distillation** column maintained at fractionation conditions, with the column having an intermediate section divided into adjoining first and second vertical fractionation chambers by a substantially flow-preventing vertical **dividing wall** , with the column also containing an upper first full diameter fractionation section located above the intermediate section and a lower second full diameter fractionation section located below the intermediate section; (b) recovering a first product stream rich in mono-branched paraffins from the second full-diameter fractionation section; (c) allowing vapor to pass upward from the second full-diameter fractionation section into the first vertical fractionation chamber, and allowing vapor to pass upward from the first vertical fractionation chamber into the first full-diameter fractionation section. The process continues with: (d) removing an overhead vapor stream comprising the desorbent hydrocarbon from the first full-diameter fractionation section, and recovering a second product stream comprising the desorbent hydrocarbon; (e) passing liquid comprising di-branched paraffins and the desorbent hydrocarbon (e.g., butane) downward from the first full-diameter fractionation section into the second vertical fractionation chamber; and (f) recovering a second product stream comprising di-branched paraffins from a lower portion of the second vertical fractionation chamber. A single fractionation column is employed to recover the desorbent butane, a highly branched paraffin product stream, and a mono-branched, paraffin-rich recycle stream, thus reducing the cost of the process. Process flow diagrams are presented.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 14 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:291658 CAPLUS

DOCUMENT NUMBER: 138:305955

TITLE: Economic and controllability investigation and comparison of energy-integrated **distillation** schemes

AUTHOR(S): Emtir, M.; Mizsey, P.; Rev, E.; Fonyo, Z.

CORPORATE SOURCE: Department of Chemical Engineering, Budapest University of Technology and Economics, Budapest, H-1521, Hung.

SOURCE: Chemical and Biochemical Engineering Quarterly (2003), 17(1), 31-42
CODEN: CBEQEZ; ISSN: 0352-9568

PUBLISHER: Croatian Society of Chemical Engineers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Five different energy-integrated **distillation** schemes: two direct sequences with forward or backward heat integration (DQF, DQB), the Petlyuk or **dividing wall** system (SP), and two sloppy separation sequences with forward or backward heat integration (SQF, SQB) are investigated for the separation of a ternary mixture from economic and controllability points of view and compared to the non-integrated conventional direct separation scheme. The economic study shows that the optimal DQB has the highest total annual cost (TAC) saving of 37%. SQF and SQB have 34% and 33% TAC savings, resp. The controllability anal., based on steady state indexes, shows that the control loops of DQF and DQB have less interactions than in the case of the other energy-integrated schemes studied. The dynamic investigations also prove that DQF and DQB show similar controllability features than the non-integrated conventional scheme. Although the SQF and SQB have good economic features but their controllability features, especially the ones of SQB, are significantly worse than those of DQF and DQB. Therefore the controllability features should play a significant role at the selection of the energy-integrated **distillation** schemes.

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 15 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2003:156503 CAPLUS

DOCUMENT NUMBER: 138:305938

TITLE: **Distillation** columns with structured packings in the next decade

AUTHOR(S): Spiegel, L.; Meier, W.

CORPORATE SOURCE: Sulzer Chemtech Ltd, Winterthur, Switz.

SOURCE: Chemical Engineering Research and Design (2003), 81(A1), 39-47
CODEN: CERDEE; ISSN: 0263-8762

PUBLISHER: Institution of Chemical Engineers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The anal. of the history of structured packings allows the conclusion that the innovation cycle will become faster. Based on the separation power as an alternative way to represent the performance characteristics an estimate of the next level of what might be the ultimate separation power is given. Regarding the column internals as distributors, only slight improvements are expected, typically in the form of streamlined forms and cheaper manufacturing CFD and computer tomog. as tools to better understand the complicated two-phase flow processes in **distillation** equipment will be of great importance for the development of new designs. A general trend is the emerging of multifunctional packings and their application in combined systems, like catalytic **distillation** or **dividing wall** column.

REFERENCE COUNT: 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 16 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:889228 CAPLUS

DOCUMENT NUMBER: 137:371732

TITLE: Integrated fractional **distillation** for an adsorptive separation process

INVENTOR(S): O'Brien, Dennis E.

PATENT ASSIGNEE(S): UOP LLC, USA

SOURCE: U.S., 9 pp.
CODEN: USXXAM

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6483002	B1	20021119	US 2000-670159	20000926
US 6407303	B1	20020618	US 2000-710627	20001110

PRIORITY APPLN. INFO.: US 2000-670159 A2 20000926

AB Construction and operational costs of simulated moving bed adsorptive separation process units are reduced by recovering the desorbent from both the extract and raffinate streams of the process in a single column (e.g., in the recovery of m-xylene). Both streams are fractionated to recover the desorbent, which is removed at one end of a **dividing wall** column, while sep. extract and raffinate products are removed from the other end of the column.

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 17 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2002:878304 CAPLUS

DOCUMENT NUMBER: 137:386624

TITLE: Process synthesis and design in industrial practice

AUTHOR(S): Kaibel, Gerd
CORPORATE SOURCE: BASF AG, Ludwigshafen, 67056, Germany
SOURCE: Computer-Aided Chemical Engineering (2002), 10(European Symposium on Computer Aided Process Engineering-12, 2002), 9-22
CODEN: CACEFH
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB This contribution demonstrates how a large chemical company, BASF, carries out process synthesis and process design in practice. First of all, the synthesis of a chemical process has to be included in the company's process chain, and the phys. and chemical properties of at least the main components and their mixts. have to be known. It is then possible to formulate possible alternative solns. for the specific process. This can be done in two different ways: using a knowledge-based method with heuristic rules or using a method based on thermodn., often accompanied by special math. procedures (MINLP). The process synthesis phase is followed by a process design phase. Suggestions must be validated by means of economic comparison. Suitable tools for process synthesis and design include CAPE tools; suitable tools for validation include miniplants. This is demonstrated by using several non-standard processes as examples. The synthesis and design of **dividing wall** columns and of reactive **distns.** is described. Mention will be made of the limitations of the procedure are discussed remarks are made of future research needs and combined fluid-solid processes and hybrid processes.

REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 18 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:578128 CAPLUS
DOCUMENT NUMBER: 137:187516
TITLE: Approximate design of fully thermally coupled **distillation** columns
AUTHOR(S): Kim, Young Han; Nakaiwa, Masaru; Hwang, Kyu Suk
CORPORATE SOURCE: Dept. of Chem. Eng., Dong-A University, Pusan, 604-714, S. Korea
SOURCE: Korean Journal of Chemical Engineering (2002), 19(3), 383-390
CODEN: KJCHE6; ISSN: 0256-1115
PUBLISHER: Korean Institute of Chemical Engineers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB An approx. design procedure for fully thermally coupled **distillation** columns (FTCDCs) is proposed and exemplified on ternary systems. The procedure gives a fast solution for preliminary study of the FTCDC. The structural information resolves the design difficulty, caused from the interlinking streams of the column, which is encountered when a conventional design procedure is implemented. The design outcome explains that how the thermodn. efficiency of the FTCDC is higher than that of a conventional two-column system and how the system of a sep. prefractionator is different from a **dividing wall** structure. From the design result of three example systems with three different feed compns., the useful performance of the proposed scheme is proved. In addition, the structural design of the FTCDC gives better understanding of the system and leads to high efficiency design of the column.

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 19 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:516705 CAPLUS
DOCUMENT NUMBER: 137:80632
TITLE: Alkylaromatic process with removal of aromatic byproducts using efficient **distillation**
INVENTOR(S): Stewart, Douglas G.; O'Brien, Dennis E.
PATENT ASSIGNEE(S): UOP LLC, USA
SOURCE: U.S., 22 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6417420	B1	20020709	US 2001-793260	20010226
US 6762334	B1	20040713	US 2002-192680	20020709

PRIORITY APPLN. INFO.: US 2001-793260 A1 20010226

AB Alkylarom. hydrocarbons are made by alkylating aromatic hydrocarbons with olefinic hydrocarbons. The olefinic hydrocarbons are produced by dehydrogenating paraffinic hydrocarbons. Aromatic byproducts formed in dehydrogenation are removed using an aromatic byproducts removal zone and either a **dividing wall distillation** column or thermally coupled **distillation** columns. The process significantly decreases the cost of utilities in producing alkylaroms., such as precursors for detergent manufacture The process needs only one reboiler with a duty of 9.3 MMBTU/h (2.7 MW), vs. two reboilers having a combined duty of 18.1 MMBTU/h (5.3 MW) of the com. process, despite the fact that the 2 streams circulate about 24% more benzene. The process not only eliminates a column including its reboiler but also decreases the reboiler energy requirements by 49%.

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 20 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:461320 CAPLUS
DOCUMENT NUMBER: 137:34779
TITLE: Isomerization process with adsorptive separation and integrated fractional **distillation**
INVENTOR(S): O'Brien, Dennis E.; Rice, Lynn H.
PATENT ASSIGNEE(S): UOP LLC, USA
SOURCE: U.S., 13 pp., Cont.-in-part of U.S. Ser. No. 670,159.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6407303	B1	20020618	US 2000-710627	20001110
US 6483002	B1	20021119	US 2000-670159	20000926

PRIORITY APPLN. INFO.: US 2000-670159 A2 20000926

AB Construction and operational costs of simulated moving bed adsorptive separation process units are reduced by recovering the desorbent from both the extract and raffinate streams of the process in a single integrated fraction column. Both streams are fractionated to recover the desorbent (e.g., a butane-isobutane mixture), which is removed at one end of a **dividing wall** column, while sep. extract and raffinate products are removed from the other end of the column. A specific embodiment includes the use of the integrated fractionation column in an isomerization application (i.e., the isomerization of pentane and hexane mixts.); process flow diagrams are presented.

REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 21 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:403934 CAPLUS
DOCUMENT NUMBER: 136:403484

TITLE: Adsorptive separation product recovery by fractional **distillation** for the separation of para-xylene from meta-xylene
INVENTOR(S): Hamm, David A.
PATENT ASSIGNEE(S): UOP LLC, USA
SOURCE: U.S., 9 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6395951	B1	20020528	US 2000-669793	20000926
WO 2003051799	A1	20030626	WO 2001-US49104	20011218
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002232649	A1	20030630	AU 2002-232649	20011218
EP 1458662	A1	20040922	EP 2001-992181	20011218
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
CN 1582266	A	20050216	CN 2001-823891	20011218
JP 2005511773	T2	20050428	JP 2003-552691	20011218
PRIORITY APPLN. INFO.:			US 2000-669793 A	20000926
			WO 2001-US49104 A	20011218

AB Construction and operational costs of recovering the extract or raffinate product of a simulated moving bed adsorptive separation process units are reduced by employing a **dividing wall** column to perform the separation The raffinate or extract stream is passed into the column at an intermediate point on the first side of the **dividing wall**, with the column delivering the adsorptive separation product as a side draw from the opposite side of the **dividing wall**. A stream of co-adsorbed impurity is removed as an overhead stream and desorbent is recovered as a net bottoms stream.
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 22 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:374936 CAPLUS
DOCUMENT NUMBER: 136:387771
TITLE: Reduce costs with **dividing-wall** columns
AUTHOR(S): Schultz, Michael A.; Stewart, Douglas G.; Harris, James M.; Rosenblum, Steven P.; Shakur, Mohammed S.; O'Brien, Dennis E.
CORPORATE SOURCE: UOP Engineering Science Skill Center, Des Plaines, IL, 60017-5017, USA
SOURCE: Chemical Engineering Progress (2002), 98(5), 64-71
CODEN: CEPRA8; ISSN: 0360-7275
PUBLISHER: American Institute of Chemical Engineers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB **Dividing-wall distillation** columns (DWC) are presented as a capital cost and energy saving technol. compared to conventional **distillation** towers. Advances in the theory of design, control and operation of a DWC contributed to a better understanding of these columns and led to com. developments. Continuous growth of the number of applications in conventional and unconventional cases led to more experiences in this technol.

L12 ANSWER 23 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:364006 CAPLUS
DOCUMENT NUMBER: 136:371463
TITLE: Process for **distillation** in a column with a **dividing wall** of saturated hydrocarbons obtained by isomerization
INVENTOR(S): Rice, Lynn H.
PATENT ASSIGNEE(S): UOP LLC, USA
SOURCE: Eur. Pat. Appl., 18 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1205460	A1	20020515	EP 2001-309484	20011109
EP 1205460	B1	20040512		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
US 6395950	B1	20020528	US 2000-710721	20001110
US 6472578	B1	20021029	US 2001-947132	20010905
AT 266612	E	20040515	AT 2001-309484	20011109
PT 1205460	T	20040831	PT 2001-309484	20011109
ES 2220678	T3	20041216	ES 2001-1309484	20011109
PRIORITY APPLN. INFO.:			US 2000-710721 A	20001110

AB Construction and operational costs of recovering the high-octane components of an isomerization raffinate product of a simulated moving bed adsorptive separation process units are reduced by employing a **dividing wall** column to perform the separation The raffinate product stream is passed into the column at an intermediate point on the first side of the **dividing wall**, with the column delivering the low-octane raffinate components as a side draw from the opposite side of the **dividing wall**. A stream of higher-octane components are removed both as an overhead stream and a bottoms stream. The side draw may be recycled to the isomerization zone; process flow diagrams are presented.
REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 24 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:248745 CAPLUS
DOCUMENT NUMBER: 136:281321
TITLE: Development of **dividing wall distillation** column design space for a specified separation
AUTHOR(S): Muralikrishna V, K.; Madhavan, K. P.; Shah, S. S.
CORPORATE SOURCE: Chemical Engineering Department and Computer Aided Design Center, Indian Institute of Technology, Bombay, India
SOURCE: Chemical Engineering Research and Design (2002), 80(A2), 155-166
CODEN: CERDEE; ISSN: 0263-8762
PUBLISHER: Institution of Chemical Engineers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The **dividing wall distillation** column has a larger number of design variables than a conventional column. For design of the column, it will be desirable to define a priori the feasible space over which all the designs lie. An attempt was made in this paper to address

this problem through a graphical representation of all the possible **dividing wall** column (DWC) designs for a specified separation of a ternary feed. The development of the theory is based on splitting the **dividing wall** column into three simple columns (a prefractionator and two downstream columns) and applying the shortcut methods of Fenske, Underwood, Gilliland and Kirkbride. For specified terminal product compns., the design space can be constructed on a 3-dimensional plot, the axes being the flow rates of two of the components in the "net distillate" from the prefractionator (**dividing wall** column being representable as a Petlyuk system), and the effective reflux ratio of the prefractionator. For ease of graphical representation, the designs will be projected on to a 2 dimensional space of prefractionator output flow rate variables for a fixed prefractionator reflux ratio. Constraints related to the availability of feed components to downstream columns, infeasible reflux ratio and imbalance in plate assignment on either side of the wall are also placed on the 2 dimensional design space to generate a feasible design space. On this design space, enveloped by various constraints, various equi-parameter curves are drawn depicting locus of points on which the chosen parameter has a constant value. The parameter chosen can be either the total number of column plates or the number of plates above/below the **dividing wall**, reboiler duty, or the cost. The design space proposed even though it uses the shortcut methods, provides the designer with a broad view of what all designs are available, out of which some attractive options may be explored further. The location of equi-cost or equi-energy curves assist the designer in identifying design changes which could lead to either decreased cost or decreased energy.

REFERENCE COUNT: 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 25 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:66715 CAPLUS
DOCUMENT NUMBER: 136:120571
TITLE: **Distillation** device for hydrogenation, etherification and reactive **distillation**
INVENTOR(S): Hill, Thomas; Kaibel, Gerd; Meyer, Gerald; Niekerken, Joerg; Schoenmakers, Hartmut
PATENT ASSIGNEE(S): Basf A.-G., Germany
SOURCE: Ger. Offen., 14 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 10033958	A1	20020124	DE 2000-10033958	20000713
PRIORITY APPLN. INFO.:			DE 2000-10033958	20000713

AB The **distillation** device is configured either as a **dividing-wall** column or as a system of thermally coupled **distillation** columns provided with following segments (1) a highest range of the general arrangement, (2) an enriching zone of the inlet unit, (3) a top of the withdrawal unit, (4) a stripping zone of the inlet unit, (5) a lower part of the withdrawal unit, and (6) a lowest range of the general arrangement. An inlet for hydrocarbons mixts. especially olefins is placed between the segments 2 and 4. A withdrawal of the medium boiler fraction is arranged between the segments 3 and 5. The highest segment 1 is provided with a withdrawal of the low boiler fraction and the lowest segment is provided with a withdrawal of the high boiler fraction. Alc. for the etherification is fed to the segments 1, 2, and/or 4. H2 for the hydrogenation is fed to the segments 3, 5. Heterogeneous hydrogenation catalysts containing reactive **distillation** components (especially thin layer catalyst packing) are present in the segments 3, 5 and heterogeneous etherification catalysts containing reactive **distillation** components are present in the segments 2, 4. Isobutene-containing hydrocarbon mixture was etherified with i-BuOH and hydrogenated with H2 to give i-Bu tertiarybutyl ether which is separated into the high boiler fraction.

L12 ANSWER 26 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:41539 CAPLUS
DOCUMENT NUMBER: 136:185954
TITLE: Structural design and operation of a fully thermally coupled **distillation** column
AUTHOR(S): Kim, Young Han
CORPORATE SOURCE: Department of Chemical Engineering, Dong-A University, Saha-gu, Pusan, 604-714, S. Korea
SOURCE: Chemical Engineering Journal (Amsterdam, Netherlands) (2002), 85(2-3), 289-301
CODEN: CMEJAJ; ISSN: 1385-8947
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A rigorous structural design procedure for fully thermally coupled **distillation** columns (FTCDC) is applied to the example system of butanol isomers to show the design performance. The procedure gives structural information of the column, and therefore iterative computation encountered in the design using conventional procedure and com. packages can be eliminated. Using the outcome of the structural design, other topics, such as thermodn. efficiency, **dividing wall** column structure and the arrangement of interlinking streams, are investigated. Finally, a 3+3 operation scheme, which has favorable indexes of multivariable controllability, is examined by checking the control performances of set-point tracking and regulation with a model predictive control.

REFERENCE COUNT: 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 27 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:895906 CAPLUS
DOCUMENT NUMBER: 136:120410
TITLE: Azeotropic **distillation** process with vertical divided-wall column
AUTHOR(S): Midori, Shizuo; Zheng, Shuang Ning; Yamada, Ikuho
CORPORATE SOURCE: Yokkaichi Factory, Kyowa Yuka Co., Ltd., Yokkaichi, 510-0022, Japan
SOURCE: Kagaku Kogaku Ronbunshu (2001), 27(6), 756-760
CODEN: KKRBAW; ISSN: 0386-216X
PUBLISHER: Kagaku Kogakkai
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

AB In order to sep. a homogeneous binary azeotropic mixture, such as ethanol and water, into individual components, an entrainer is usually added to form a new heterogeneous ternary azeotropic mixture An azeotropic **distillation** method with the conventional two-column sequence is usually used to complete the separation task. In this paper, we present a new azeotropic **distillation** column with a vertical **dividing wall**. developed by improving the divided wall column for ordinary three component mixture separation as reported by R. O. Wright and N. J. Elizabeth (1949). The new system differs greatly from the conventional two-column sequence. In this system, the column is equipped with one condenser at the top and two reboilers at the bottom, allowing single-column azeotropic **distillation** The features of this column are demonstrated by simulation for ethanol dehydration using cyclohexane as entrainer in comparison with the conventional two-column system, It is confirmed that for dehydration of a 90% ethanol feed stock, an energy saving of .apprx.7% can be expected.

L12 ANSWER 28 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:849490 CAPLUS

DOCUMENT NUMBER: 136:87701
TITLE: Design and optimization of fully thermally coupled **distillation** columns. Part 2: application of **dividing wall** columns in retrofit
AUTHOR(S): Amminudin, K. A.; Smith, R.
CORPORATE SOURCE: Department of Process Integration, UMIST, Manchester, UK
SOURCE: Chemical Engineering Research and Design (2001), 79(A7), 716-724
CODEN: CERDEE; ISSN: 0263-8762
PUBLISHER: Institution of Chemical Engineers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB This paper addresses the application of **dividing wall** columns in retrofit. It emphasizes the need to take maximum advantage of the existing hardware with min. capital outlay. Based on this study, several practical issues associated with the application of the **dividing wall** column in retrofit were identified and as a result, its thermodynamically equivalent arrangements, such as the prefractionator arrangement and the Petyluk column, are often recommended instead. A case study involving the improvement of energy efficiency and capacity expansion of the NGL separation train was illustrated to demonstrate the anal. involved.
REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 29 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:849489 CAPLUS
DOCUMENT NUMBER: 136:87700
TITLE: Design and optimization of fully thermally coupled **distillation** columns. Part 1: preliminary design and optimization methodology
AUTHOR(S): Amminudin, K. A.; Smith, R.; Thong, D. Y.-C.; Towler, G. P.
CORPORATE SOURCE: Department of Process Integration, UMIST, Manchester, UK
SOURCE: Chemical Engineering Research and Design (2001), 79(A7), 701-715
CODEN: CERDEE; ISSN: 0263-8762
PUBLISHER: Institution of Chemical Engineers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The design of a fully thermally coupled **distillation** column, or its thermodynamically equivalent arrangement, the **dividing wall distillation** column, is more complex than conventional arrangements because of the greater number of degrees of freedom. All of these degrees of freedom must be initialized before rigorous simulation can be performed. The distribution of stages in the various sections of the column, the reflux ratio, vapor and liquid splits on either side of the fully thermally coupled columns and feed condition must all be initialized. Yet these are important degrees of freedom that all interact with each other in the design. A new approach to the design of fully thermally coupled columns is proposed in this paper. The procedure uses the equilibrium stage composition concept developed for the design of azeotropic **distillation** systems. The method is semi-rigorous in nature, providing an initial design that is close to the results of rigorous simulation. The approach then allows the degrees of freedom to be optimized simultaneously and an optimized initial design established for rigorous simulation. A case study was used to demonstrate the application of the new method.
REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 30 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:153451 CAPLUS
DOCUMENT NUMBER: 134:209860
TITLE: Rigorous design of fully thermally coupled **distillation** column
AUTHOR(S): Kim, Young Han
CORPORATE SOURCE: Department of Chemical Engineering, Dong-A University, Pusan, 604-714, S. Korea
SOURCE: Journal of Chemical Engineering of Japan (2001), 34(2), 236-243
CODEN: JCEJAQ; ISSN: 0021-9592
PUBLISHER: Society of Chemical Engineers, Japan
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A rigorous design procedure for a fully thermally coupled **distillation** column is proposed and applied to an example system of butanol isomer ternary mixture The design procedure is composed of the calcn. of limiting requirements and a rigorous simulation using material and energy balances. The result of the proposed design is compared with the design of a conventional two-column system. It is found that the fully thermally coupled **distillation** requires less investment and energy cost than conventional **distillation**, even if higher reboiler temperature is required. It is also pointed out that the **dividing wall** structure gives less efficient performance than the Petlyuk column having a smaller number of trays of a prefractionator than that of the mid-section of a main column.
REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 31 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:416565 CAPLUS
DOCUMENT NUMBER: 131:46468
TITLE: Optimal operation of Petlyuk **distillation**: steady-state behavior
AUTHOR(S): Halvorsen, Ivar J.; Skogestad, Sigurd
CORPORATE SOURCE: Department of Chemical Engineering, Norwegian University of Science and Technology, Trondheim, 7489, Norway
SOURCE: Journal of Process Control (1999), 9(5), 407-424
CODEN: JPCOEO; ISSN: 0959-1524
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The "Petlyuk" or "**dividing-wall**" or "fully thermally coupled" **distillation** column is an interesting alternative to the conventional cascaded binary columns for separation of multi-component mixts. However, the industrial use has been limited, and difficulties in operation have been reported as one reason. With three product compns. controlled, the system has two degrees of freedom left for online optimization. The steady-state optimal solution surface is quite narrow, and depends strongly on disturbances and design parameters. Thus it seems difficult to achieve the potential energy savings compared to conventional approaches without a good control strategy. Candidate variables which may be used as feedback variables in order to keep the column operation close to optimal in a "self-optimizing" control scheme is discussed.
REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 32 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:786592 CAPLUS
DOCUMENT NUMBER: 130:40276
TITLE: Optimal Design of Thermally Coupled **Distillation** Columns
AUTHOR(S): Duennebier, Guido; Pantelides, Constantinos C.
CORPORATE SOURCE: Centre for Process Systems Engineering, Imperial College of Science Technology and Medicine, London, SW7 2BY, UK

SOURCE: Industrial & Engineering Chemistry Research (1999), 38(1), 162-176
CODEN: IECRED; ISSN: 0888-5885
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB This paper considers the optimal design of thermally coupled **distn** . columns and **dividing wall** columns using detailed column models and math. optimization. The column model used is capable of describing both conventional and thermally coupled columns, which allows comparisons of different structural alternatives to be made. Possible savings in both operating and capital costs of up to 30% are illustrated using two case studies.
REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 33 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:272699 CAPLUS
DOCUMENT NUMBER: 128:272164
TITLE: Operation and control of **dividing wall distillation** columns. Part 1: degrees of freedom and dynamic simulation
AUTHOR(S): Mutalib, M. I. Abdul; Smith, R.
CORPORATE SOURCE: Department of Process Integration, UMIST, Manchester, UK
SOURCE: Chemical Engineering Research and Design (1998), 76(A3), 308-318
CODEN: CERDEE; ISSN: 0263-8762
PUBLISHER: Institution of Chemical Engineers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The **dividing wall distillation** column was known now for some 50 yr. Despite its potential to make major savings in energy and capital costs in **distillation**, it has not been widely used in practice. One of the major fears in applying the technol. is uncertainty regarding the control and operation of the arrangement. This paper investigates theor. the operation and control of the **dividing wall** column. A degrees of freedom anal. was performed to determine the number of control loops required. Possible control configurations were then investigated using Relative Gain Array Anal. and dynamic simulation. The results of these theor. studies indicate that simple control schemes are capable of providing stable control.
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 34 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:746932 CAPLUS
DOCUMENT NUMBER: 128:5095
TITLE: Partitioned Petlyuk arrangement for quaternary separations
AUTHOR(S): Christiansen, Atle C.; Skogestad, Sigurd; Lien, Kristian
CORPORATE SOURCE: Dept. of Chem. Eng., Norwegian Univ. of Science and Technology, Trondheim, N-7034, Norway
SOURCE: Institution of Chemical Engineers Symposium Series (1997), 142(Distillation and Absorption '97, Vol. 2), 745-756
CODEN: ICESDB; ISSN: 0307-0492
PUBLISHER: Institution of Chemical Engineers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The task of providing energy efficient separation arrangements have received considerable attention in the literature. The conventional approach to increasing the process efficiency subscribe to integrating conventional **distillation** arrangements (indirect coupling). Instead, there has recently been a growing interest in the development of new-configurations (unit operations) that offer both operational (energy) and capital savings. Among these the Petlyuk or **dividing wall** columns (direct coupling) is found. In this paper, the energy consumption is compared in optimized Petlyuk arrangements with that of optimized sequences of regular columns. The results are based on simulation using a detailed model. A novel column arrangement is introduced by utilizing both direct and indirect coupling, for which the use of a horizontal partition is proposed in order to avoid remixing of already separated components.
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 35 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:736293 CAPLUS
DOCUMENT NUMBER: 128:14414
TITLE: Column with movable vertical **dividing wall** for continuous **distillation** separation of multicomponent mixtures
INVENTOR(S): Kaibel, Gerd; Stroezel, Manfred; Rheude, Udo
PATENT ASSIGNEE(S): BASF A.-G., Germany
SOURCE: Ger. Offen., 6 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19617210	A1	19971106	DE 1996-19617210	19960430
US 5914012	A	19990622	US 1997-845226	19970421
EP 804951	A2	19971105	EP 1997-106627	19970422
EP 804951	A3	19980408		
EP 804951	B1	20020911		
R: BE, CH, DE, ES, FR, GB, LI, NL				
ES 2183038	T3	20030316	ES 1997-106627	19970422
CA 2203821	AA	19971030	CA 1997-2203821	19970425
CA 2203821	C	20050405		
JP 10033901	A2	19980210	JP 1997-112555	19970430
CN 1177513	A	19980401	CN 1997-113020	19970430
CN 1073866	B	20011031		

PRIORITY APPLN. INFO.: DE 1996-19617210 A 19960430
AB A **distillation** column for separation of ≥3 fractions contains ≥1 movable vertical **dividing wall**(s). The **dividing wall** is movable in guide rails. Thickness of the **dividing wall** is 0.1-3 mm compared to 5-10 mm for the conventional rigid **dividing wall**. A **dividing wall** section is either attached on 1 side to a column packing layer or not attached. The non-attached side(s) is (are) provided with strip-type spring spacers. The **dividing wall** section exceeds the packing layer thickness by 1-10 mm and forms a roof-like structure. Preferably, operation of the columns with the **dividing wall** is arranged so that pressure at the outlet side is greater or equal compared to that at the inlet side.

L12 ANSWER 36 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:370846 CAPLUS
DOCUMENT NUMBER: 127:52630
TITLE: Optimizing control of Petlyuk **distillation**: understanding the steady-state behavior
AUTHOR(S): Halvorsen, Ivar J.; Skogestad, Sigurd
CORPORATE SOURCE: Department Chemical Engineering, Norwegian University Science Technology, Trondheim, 7034, Norway
SOURCE: Computers & Chemical Engineering (1997), 21(Suppl.,

Joint 6th International Symposium on Process Systems Engineering and 30th European Symposium on Computer Aided Process Engineering, 1997), S249-S254
CODEN: CCENDW; ISSN: 0098-1354
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The "Petlyuk" or "**dividing-wall**" or "fully thermally coupled" **distillation** column is an interesting alternative to the conventional cascaded binary columns for separation of multi-component mixts. The industrial use has been very limited, and difficulties in control has been reported as one reason. Since there are more manipulated variables than controlled variables, the column is a candidate for online optimization. It is shown that the steady-state optimal solution surface is quite narrow, and depend strongly on disturbances and design parameters. Thus it seems difficult to achieve the potential energy savings compared to traditional approaches without a good control strategy.
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 37 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:370759 CAPLUS
DOCUMENT NUMBER: 127:52628
TITLE: Complex **distillation** arrangements: extending the Petlyuk ideas
AUTHOR(S): Christiansen, Atle C.; Skogestad, Sigurd; Lien, Kristian
CORPORATE SOURCE: Department Chemical Engineering, Norwegian University Science Technology, Trondheim, N-7034, Norway
SOURCE: Computers & Chemical Engineering (1997), 21(Suppl., Joint 6th International Symposium on Process Systems Engineering and 30th European Symposium on Computer Aided Process Engineering, 1997), S237-S242
CODEN: CCENDW; ISSN: 0098-1354
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The task of separating a multicomponent mixture into streams enriched in the resp. constituents is commonly carried out in conventional **distn** . columns arranged in series. However, due to the scrutiny of tighter requirements for energy and cost efficiency, current research aims at alternative column arrangements that offer savings in both operational (energy) and capital costs. Among these are the Petlyuk or **dividing wall** column, in which three components are separated in a single shell using only one reboiler and one condenser. In this paper the Petlyuk ideas are extended to sepns. of four components, although extensions to more components is straightforward. A general definition is provided of Petlyuk arrangements and discuss alternative structures from the literature. Following this overview the arrangements are considered which allows for implementation in a single shell using **dividing walls** or vertical partitions.
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 38 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:512238 CAPLUS
DOCUMENT NUMBER: 121:112238
TITLE: The design and optimization of **dividing wall distillation** columns
AUTHOR(S): Triantafyllou, C.; Smith, R.
CORPORATE SOURCE: Centre for Process Integration, UMIST, Manchester, UK
SOURCE: Energy Effic. Process Technol., [Proc. Int. Conf.] (1993), Meeting Date 1992, 351-60. Editor(s): Pilavachi, Petros A. Elsevier: London, UK.
CODEN: 60FPAC
DOCUMENT TYPE: Conference
LANGUAGE: English
AB For most sepns. fully thermally coupled **distillation** columns require significantly less energy than conventional arrangements. This paper describes a design model which provides a basis for investigating the degrees of freedom to minimize the energy consumption. The optimization of fully thermally coupled columns is also discussed.

L12 ANSWER 39 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:410538 CAPLUS
DOCUMENT NUMBER: 117:10538
TITLE: The design and optimization of fully thermally coupled **distillation** columns
AUTHOR(S): Triantafyllou, C.; Smith, R.
CORPORATE SOURCE: Cent. Process Integr., UMIST, Manchester, UK
SOURCE: Chemical Engineering Research and Design (1992), 70(A2), 118-32
CODEN: CERDEE; ISSN: 0263-8762
DOCUMENT TYPE: Journal
LANGUAGE: English
AB For most sepns., fully thermally coupled **distillation** columns are thermodynamically more efficient than conventional arrangements. A design model was presented which provides a basis for investigating the degrees of freedom to minimize the energy consumption or the number of plates. Optimization procedures are presented. The **dividing wall** column achieved energy savings of full thermal coupling together with capital savings from the use of a single shell, single reboiler, and single condenser, except in extreme cases.

L12 ANSWER 40 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1986:481349 CAPLUS
DOCUMENT NUMBER: 105:81349
TITLE: **Distillation** column with helicoidal circulation of liquid
INVENTOR(S): Gourlia, Jean Paul; Neel, Laurent; Ptak, Christian; Tondeur, Daniel
PATENT ASSIGNEE(S): Societe Nationale Elf Aquitaine (SNEA), Fr.
SOURCE: Belg., 14 pp.
CODEN: BEXXAL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
BE 904202	A1	19860529	BE 1986-216245	19860210
FR 2577147	A1	19860814	FR 1985-1874	19850211
FR 2577147	B1	19870417		
EP 192539	A1	19860827	EP 1986-400234	19860204
EP 192539	B1	19881102		
R: DE, GB, NL				
DK 8600632	A	19860812	DK 1986-632	19860210
DK 163108	B	19920120		
DK 163108	C	19920609		
NO 8600469	A	19860812	NO 1986-469	19860210
NO 165481	B	19901112		
NO 165481	C	19910220		

PRIORITY APPLN. INFO.: FR 1985-1874 A 19850211
AB The cylindrical column is subdivided into a series of semicircular plates, and each plate has ≥1 **dividing wall** with openings at the top or bottom, alternately, to allow free passage of the materials. The gas and vapors circulate cross-currently and describe helicoidal pathways from one plate to the next. The circulating gases do not intermix, thus providing a better separation

L12 ANSWER 41 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1971:55562 CAPLUS
DOCUMENT NUMBER: 74:55562
TITLE: Distilling column with infinitely variable reflux ratio
INVENTOR(S): Gelderblom, Horst D.; Morsdorf, Manfred
PATENT ASSIGNEE(S): Chemiebau Dr. A. Zieren G.m.b.H. und Co., K.-G.
SOURCE: Ger. Offen., 15 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1933056	A	19710114	DE 1969-1933056	19690630
DE 1933056	C3	19730726		
NL 7008892	A	19710104	NL 1970-8892	19700617
FR 2051295	A5	19710402	FR 1970-23532	19700625
GB 1304735	A	19730131	GB 1970-31358	19700629
US 3670769	A	19720620	US 1970-51295	19700630

PRIORITY APPLN. INFO.: DE 1969-1933056 A 19690630
AB A distilling column with infinitely variable reflux ratio is described. It is equipped with a cylindrical casing with a **dividing wall** movable axially to subdivide the intake.

L12 ANSWER 42 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1967:116924 CAPLUS
DOCUMENT NUMBER: 66:116924
TITLE: Separation of fatty acids from fats by steam **distillation**
INVENTOR(S): Baroni, Lorenzo
PATENT ASSIGNEE(S): Fratelli Gianazza Societa Accomandita Semplice
SOURCE: Ger., 3 pp.
CODEN: GWXXAW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 1236112		19670309	DE 1961-G32557	19610622

AB The apparatus consists of 1 or more **distillation** elements free of coils but with sep. coils arranged within an evacuated vessel. The **distillation** elements may be arranged vertically one over the other. These elements are heated vessels with **dividing walls** so that they form 1 continuous channel in the element through which the fat feed flows. In these elements, a small perforated tube carrying steam for treatment of the fatty feed is placed. The **distillation** elements may also be a perpendicular countercurrent **distillation** column containing a series of slanted baffles or a column packing, such as Raschig rings. The liquid fat is drawn off at the top of the column and the steam is drawn off at the bottom. The **distillation** elements may also be titled at an angle to the perpendicular in the evacuated vessel. There are slanted baffles over which the liquid fat passes and under which the steam tubes are placed.

L12 ANSWER 43 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1925:22142 CAPLUS
DOCUMENT NUMBER: 19:22142
ORIGINAL REFERENCE NO.: 19:2877e
TITLE: Apparatus for heating hydrocarbon oils to effect fractional **distillation**
INVENTOR(S): Wilson, W. E.; Wilson, H. W.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 1546055		19250714	US 1922-533445	19220201

AB The apparatus comprises a series of compartments communicating near their bottoms through openings in the **dividing walls**. Each of the compartments has a vapor outlet and oil maintained at a constant level is successively heated to higher temps. in the different compartments.

L12 ANSWER 44 OF 44 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1917:17138 CAPLUS
DOCUMENT NUMBER: 11:17138
ORIGINAL REFERENCE NO.: 11:3423a-b
TITLE: Gas mixture containing **distillation** gas and water gas
INVENTOR(S): Dolensky, E.
DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CH 75143		19170601	CH	

AB In the manufacture of **distillation** and water gas by an intermittent process from bituminous fuel, by the alternate introduction of air (heating period) and of a steam-air mixture or steam (gas period), the production of the gas is effected in a generator containing in its upper portion, coal, and in its lower portion, comprizing two sep. canal shafts, containing only coke. During the heating period, the lower portion of the coal charge is blown hot with air traversing the column just above the **dividing wall** between the two lower columns of coke, so that the hottest zone is directly beneath the column of coal, and that during the gas period the gases generated in the lower portion of the column are drawn through the coal.

=> LOG HOLD

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	276.00	283.31
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CA SUBSCRIBER PRICE	-66.00	-66.00

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                                                       ENTRY    SESSION
FULL ESTIMATED COST                                   276.00     283.31

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                       ENTRY    SESSION
CA SUBSCRIBER PRICE                                   -66.00     -66.00

=> FILE CAPLUS
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                   276.00     283.31

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
                                                       ENTRY    SESSION
CA SUBSCRIBER PRICE                                   -66.00     -66.00

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     FILE 'REGISTRY' ENTERED AT 09:34:28 ON 10 APR 2006
L1             1 S TEDA/CN

     FILE 'CAPLUS' ENTERED AT 09:34:41 ON 10 APR 2006
L2          5385 S L1
L3             0 S L2 AND DIVIDING WALL
L4             1 S L2 AND COLUMN AND WALL
L5           380 S DIVIDING WALL OR DWC
L6            44 S L5 AND PUR?
L7             3 S L6 AND POLY?
L8            41 S L6 NOT L7
L9            54 S DIVIDING WALL AND DISTILLATION
L10            0 S L9 AND TEDA
L11            0 S L9 AND TRIETHYL?
L12           44 S L9 NOT L8

     FILE 'CAPLUS' ENTERED AT 09:58:00 ON 10 APR 2006

=> LOG HOLD
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.46     283.77

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)          SINCE FILE      TOTAL
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